Examples of Regulatory Language for Nearshore and Marine Shoreline Protection

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Prepared for the **Puget Sound Action Team**
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Puget Sound Action Team partners

The Puget Sound Action Team is the state's partnership for Puget Sound. The Action Team Partnership defines, coordinates, and puts into action the state's environmental and sustainability agenda for the Sound.

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Table of Contents

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This document is also available through the Puget Sound Action Team at www.psat.wa.gov

INTRODUCTION

This document contains a compilation of examples of existing regulatory language from Puget Sound jurisdictions that define, classify, protect and mitigate the functions, values and processes of the Puget Sound nearshore and marine shorelines. Dates of adoption for the example ordinances are included in the Appendix at the end of the document. The document will be updated at least annually to include new examples and to replace those that have been revised by local governments. Until those updates, some examples may no longer be in effect and the reader interested in the most current regulations is advised to contact jurisdictions for this information.

The examples included in this document are selected based on criteria that include protection of the nearshore and marine shoreline, the online availability of ordinances, and the extent to which the examples represent various approaches. Included are examples from both cities and counties. The selection is not intended to be comprehensive or exhaustive. Any one example may represent a similar approach adopted by a number of jurisdictions.

In critical areas ordinances, most examples of nearshore and marine shoreline protections are included in ordinance sections that designate and protect fish and wildlife habitat conservation areas. However, some jurisdictions may have reason to include language related to nearshore and marine shoreline protection under regulations for different critical areas, such as for geologic hazard areas to protect shoreline slope stability, critical aquifer recharge areas to protect vulnerable potable water supplies, and flood hazard areas along marine shorelines. Except for examples from the City of Everett Shoreline Master Program, the document includes only limited examples from local shoreline master programs because they are not updated to Ecology's 2003 Shoreline Management Act Guidelines. Future revisions of this document will provide additional examples approved under the new guidelines.

It is important to note that each jurisdiction has unique conditions, and that the regulatory language used by that jurisdiction is specialized for those conditions. In addition, different jurisdictions have built different frameworks under which their regulations are organized. These examples are not intended to provide examples of best available science, but are compiled to provide a variety of approaches for local jurisdictions to consider while recognizing local conditions and the organizational framework of local ordinances.

CLALLAM COUNTY

27.12.310 Classification and designation.
(1) Classification. The following classifications shall be used in designating aquatic and wildlife habitat conservation areas:

> (a) Aquatic Habitat Conservation Areas. Includes those streams, lakes, marine waters and their associated wetlands and floodplains defined as shorelines of the State in the Shoreline Management Act of 1971 and the Clallam County Shoreline Master Program, which are also categorized as "shorelands" under Chapter 90.58 RCW, Shoreline Management Act, …
>
> (b) Class I Wildlife Habitat Conservation Area. Those lands including the following:
>
> > (ii) Habitats targeted for preservation by Federal, State and/or local government which provide fish and wildlife habitat benefits, such as important waterfowl areas identified by the U.S. Fish and Wildlife Service.
>
> (c) Class II Wildlife Habitat Conservation Area. Those lands including the following:
>
> > (ii) Priority habitats not classified as Class I. These habitats may include wetlands, aquatic conservation areas, marine bluffs, stream ravines, caves, cliffs, islands, meadows, old-growth/mature forest, snag-rich areas, talus slopes, urban natural open space, and those land and water areas identified as significant habitat corridors under the Clallam County Comprehensive Plan, CCC Title 31.

(2) Designation. All lands and shorelands classified as aquatic and wildlife habitat conservation areas are hereby designated as aquatic and wildlife habitat conservation areas. These areas shall be mapped whenever possible. These maps shall be advisory and used by the Administrator and/or review authority to provide guidance in determining applicability of the standards to a property. Sites which include aquatic and wildlife habitat conservation areas which are not mapped shall be subject to the provisions of this section and chapter. The Administrator shall provide maps in a critical areas resource map portfolio as guidance in identifying the presence of aquatic and wildlife habitat conservation areas.

27.12.410 Classification and designation.
(1) Classification. The following definitions and terms shall be used in classifying geologically hazardous areas:

> (a) Landslide Hazard Areas. Lands potentially subject to mass movement due to a combination of geologic, topographic, and hydrologic factors. The following classifications shall be designated as landslide hazards and are subject to the requirements of this chapter:
>
> > (viii) Marine coastlines including marine bluffs potentially unstable due to wave action or mass wasting and littoral dune systems which border the ordinary high water mark.

WHATCOM COUNTY

16.16.710 Critical area – Fish and wildlife habitat conservation areas.
Fish and wildlife habitat conservation areas are critical areas. Fish and wildlife habitat conservation areas include:

A. Areas with which listed species have a primary association;
B. Habitats and species of local importance;
C. Shellfish habitat conservation areas;
D. Kelp and eelgrass beds, Pacific herring spawning areas;
E. Surf smelt and Pacific sand lance spawning areas;

KING COUNTY

NEW SECTION. SECTION 7. There is hereby added to K.C.C. chapter 21A.06 a new section to read as follows:
Aquatic area. Any nonwetland water feature including all shorelines of the state, rivers, streams, marine waters, inland bodies of open water including lakes and ponds, reservoirs and conveyance systems and impoundments of these features if any portion of the feature is formed from a stream or wetland and if any stream or wetland contributing flows is not created solely as a consequence of stormwater pond construction. "Aquatic area" does not include water features that are entirely artificially collected or conveyed storm or wastewater systems or entirely artificial channels, ponds, pools or other similar constructed water features.

NEW SECTION. SECTION 32. There is hereby added to K.C.C. chapter 21A.06 a new section to read as follows:
Drift cell. An independent segment of shoreline along which littoral movements of sediments occur at noticeable rates depending on wave energy and currents. Each drift cell typically includes one or more sources of sediment, such as a feeder bluff or stream outlet that spills sediment onto a beach, a transport zone within which the sediment drifts along the shore and an accretion area; an example of an accretion area is a sand spit where the drifted sediment material is deposited.

NEW SECTION. SECTION 64. There is hereby added to K.C.C. chapter 21A.06 a new section to read as follows:
Habitat, fish: habitat that is used by fish at any life stage at any time of the year including potential habitat likely to be used by fish. "Fish habitat" includes habitat that is upstream of, or landward of, human-made barriers that could be accessible to, and could be used by, fish upon removal of the barriers. This includes off- channel habitat, flood refuges, tidal flats, tidal channels, streams and wetlands.

NEW SECTION. SECTION 141. There is hereby added to K.C.C. chapter 21A.24
a new section to read as follows:
Basin and Shoreline Conditions Map.
A. The Basin and Shoreline Conditions Map, included in Attachment A to this ordinance, is the basis for determining standards or modifications of standards related to aquatic areas, wetlands complexes and RA zone clearing limits.
B. Basins and marine shorelines are rated as "high," "medium," or "low" using the criteria listed in subsection C of this section and can be generally characterized as follows:

1. High condition ratings are generally reflective of areas with low development intensity (e.g., substantial forest cover, relatively few roads crossing aquatic areas and wetlands, low amounts of impervious surfaces, and low amounts armoring and structures along shorelines) and a significant biological value (e.g., the presence or high use by critical species or the presence of rare, endangered or highly sensitive habitats).

2. Medium condition ratings are generally reflective of areas with either high or moderate development intensity and moderate or low insignificant biological value.

3. Low condition ratings are generally reflective of areas with high development intensity (e.g., reduced forest cover, many roads crossing aquatic areas and wetlands, significant amounts of impervious surfaces, and extensive amount of armoring and structures along shorelines) and a low biological value (e.g., the little presence or low use by critical species or little or no presence of rare, endangered or highly sensitive habitats).

C. Ratings designated on the Basin and Shoreline Conditions Map shall be determined in accordance with the following criteria:

1. Basin conditions for riverine tributary systems are based on:

a. presence and amount of use for spawning and rearing and habitat for chinook salmon, bull trout, coho salmon, chum salmon and cutthroat trout;

b. total impervious surface area;

c. number of acres of mapped category I wetlands;

d. number of road crossings of aquatic areas;

e. surrounding land use intensity;

f. amount of forest cover;

g. presence of mapped wildlife habitat network; and

h. presence of mapped priority species nests or breeding habitat.

2. Conditions for marine shorelines are based on:

a. presence and amount of forage fish, such as surf smelt and sand lance and the extent of their spawning sites within the drift cell; b. length and percentage of cell without eelgrass, with patchy eelgrass and with continuous eelgrass;

c. the amount and type of forest cover;

d. length and percentage of cell with low, moderate and high impervious surface;

e. presence and amount of large woody debris and drift logs;

f. length and percentage of cell armored and unstable slope armored

g. number of docks, piers, groins, jetties, breakwaters and boat ramps;

h. number of marsh areas present and length and percentage of cell within marsh habitat;

i. length and percentage of cell within important bird area; and

j. length and percentage of cell within marine reserve.

SECTION 209. Ordinance 14187, Section 1, and K.C.C. 21A.24.500 are each hereby amended to read as follows:

PIERCE COUNTY

18E.10.140 - Appendix A
Mapping Sources

The following sources of information, or latest available version, may be used to indicate the presence of critical areas within Pierce County and provide data used in the development of the Pierce County Critical Area Atlas Maps:

F. The following sources identify fish and wildlife habitats or presence and/or are used as indicators of critical fish or wildlife presence:

1. Commercial Shellfish Harvesting Areas in Puget Sound, Washington Department of Health, was used as a source to identify fish and wildlife habitat areas which are depicted in the Critical Areas Atlas-Fish and Wildlife Habitat Areas-Commercial Shellfish Harvesting Areas Map; Exhibit "D" to Ordinance No. 2004-56s Page 14 of 144

3. Natural Heritage Data Base, Washington Department of Natural Resources, was used as a source to identify fish and wildlife habitat areas which are depicted in the Critical Areas Atlas-Fish and Wildlife Habitat Areas-Vascular Plants and Fish andWildlife Habitat Areas-Animals Maps;

4. Puget Sound Environmental Atlas, Puget Sound Water Quality Authority;

5. Coastal Zone Atlas of Washington, Volume VII, Pierce County, Washington Department of Ecology;

6. Priority Habitats and Species Program and Priority Habitat Species Maps, Washington Department of Fish and Wildlife;

7. Nongame Data Base, Washington Department of Fish and Wildlife;

8. Streamnet Database, Washington Department of Fish and Wildlife;

9. Water Resource Index Areas (WRIA), Washington Department of Fish and Wildlife;

10. Annual Inventory of Commercial and Recreational Shellfish Areas in Puget Sound, Washington State Department of Health, Office of Shellfish Programs;

11. Salmon Distribution Maps, Washington Department of Fish and Wildlife and Washington State Conservation Commission Data, January 2000.

18E.40.020 Fish and Wildlife Species and Habitat Conservation Areas.

A. **General.** Fish and wildlife habitat conservation areas are those areas that support regulated fish and wildlife species, typically identified either by known point locations of specific species (such as a nest or den) or by habitat areas or both.

B. **Federally- and State-Listed Species and their Associated Habitats.** Areas which have a primary association with federally-listed endangered, threatened, and candidate species of fish or wildlife (as specified in 50 CFR 17.11 or 50 CFR 17.12) or State-listed endangered, threatened, sensitive, candidate, and monitor species (as specified in WAC 232-12-297 and WDFW Policy M-6001) that if altered may reduce the likelihood that the species will survive and reproduce over the long term. A list of endangered, threatened, sensitive, candidate, and monitor species found in Pierce County is available at the Pierce County Planning and Land Services Department.

C. **Species of Local Importance and their Associated Habitats.** In addition to federally and state-listed species, the following fish and wildlife species and their associated habitat areas shall be regulated under this Chapter:

1. **Fish.** Coho salmon, chinook salmon, bull trout, pink salmon, chum salmon, sockeye salmon, cutthroat trout, native/wild rainbow trout/steelhead, greenlings (lingcod), Pacific whiting, smelt (longfin, surfsmelt), herring, and sandlance (Pacific).

2. **Birds.** Osprey.

3. **Vulnerable Aggregations.** Vulnerable aggregations of fish and wildlife species as defined in the Washington Department of Fish and Wildlife Priority Habitats and

Species/Heritage Program that reside in Pierce County. A list of vulnerable aggregations of fish and wildlife species found in Pierce County is available at the Pierce County Planning and Land Services Department.

D. **Habitats of Local Importance.** Documented habitat areas or potential habitat areas and point locations for fish and wildlife species. These areas include specific habitat types, which are infrequent in occurrence in Pierce County and may provide specific habitats with which endangered, threatened, sensitive, candidate, or monitor fish and wildlife species have a primary association, such as breeding habitat, winter range, and movement corridors. These areas include the following:

9. Commercial and recreational shellfish areas.

10. Kelp and eelgrass beds.

11. Herring, smelt, and sandlance spawning areas.

12. Waters of the state and/or natural waters and adjacent riparian-shoreline areas (165 feet landward measured from the ordinary high water mark) including: Exhibit "D" to Ordinance No. 2004-56s Page 62 of 144

a. All water bodies classified by the Washington Department of Natural Resources (DNR) water typing classification system as detailed in WAC 222-16-030 & 031.

b. All waters that support regulated fish or wildlife species (i.e., areas that have connectivity to fish bearing waters and may potentially provide habitat given no natural barriers to fish passage).

c. Ponds and their submerged aquatic beds.

d. Side channels and/or off-channel habitat.

13. Estuaries and tidal marshes.

16. Heron rookeries.

17. Cavity nesting duck habitat.

E. **Potential Fish and Wildlife Habitat Conservation Areas.** Potential regulated fish and wildlife habitat conservation areas, as depicted on the Critical Areas Atlas-Critical Fish and Wildlife Habitat Area Maps, are those areas where the suspected presence of regulated fish or wildlife species is sufficient to require fish or wildlife habitat conservation area review. (See Figure 18E.40-2 in Chapter 18E.120.) Potential regulated fish and wildlife habitat conservation areas are determined using the following criteria:

1. A habitat area identified on one of the maps listed in 18E.10.140 - Appendix A, G. (includes but is not limited to breeding habitat, winter ranges, movement corridors, kelp and eelgrass beds, commercial and recreational shellfish areas, oak woodlands, rivers, streams, lakes, ponds, etc., as outlined in Section 18E.40.020 A.-D. above) plus the adjacent 165 feet surrounding the habitat area. Note: the 165 foot distance around rivers, streams, lakes, and ponds shall be measured from the ordinary high water mark.

2. A point location identified on one of the maps listed in 18E.10.140 - Appendix A, G. (including but not limited to nests, dens, rookeries, etc.) plus the adjacent 800 feet surrounding the point location.

3. Bald eagle foraging areas (1/2 mile from the nest in either direction along the shoreline and 250 feet landward measured from the ordinary high water mark).

SAN JUAN COUNTY

18.30.160 Fish and wildlife habitat conservation areas.

A. Classification.

5. Marine Habitat Areas. These areas include the following:

a. All kelp and eelgrass beds;

b. Priority shellfish areas as follows:

i. All public and private tidelands or bedlands which are approved or conditionally approved by the Washington Department of Health for shellfish harvest;

ii. Any shellfish protection districts created under Chapter 90.72 RCW; and

iii. Areas with all of the following attributes: broad intertidal areas, bays with geographically restricted wave action and circulation, poor or limited flushing, warmer water temperatures, seasonally reduced salinities, and increased potential for algae bloom; and

c. All identified smelt spawning areas.

THURSTON COUNTY

17.15.200 Definitions--Critical areas, categories and terms.

"Marine bluff hazard area" means the following:

1. Those marine bluffs which have a vertical height of twenty feet or more, and the upland area which lies within two hundred feet of the top of the marine bluff; or

2. Those marine bluffs identified as "unstable" or "intermediate stability" on the maps of the Coastal Zone Atlas of Washington; Volume 8 Thurston County (1980), as amended, and the upland area which lies within two hundred feet of the top of the marine bluff; unless under twenty feet high and determined stable on an individual parcel basis by the review authority (refer to Figure 5).

17.15.740 Listing or delisting of important habitats and species.

A. The process for listing or delisting an important habitat or species shall be an amendment to this chapter. This action may be initiated by request of the state Department of Wildlife, county staff or interested citizens. Any such request by county staff or interested citizens shall be in writing and shall include:

1. The common and scientific names of the nominated species;

2. A description of the habitat needs of the species in sufficient detail to enable accurate delineation of habitat areas;

3. Maps or inventories of known occurrences within the county;

4. Habitat management recommendations, including potential uses and restrictions of the habitat areas, seasonally sensitive areas and other guidelines necessary for the protection of the species;

5. Name and address of the nominator;

6. Reasons why the nominator wants the species to be listed or delisted; and

7. Other supporting documentation.

B. The written request and supporting data may be evaluated by a qualified wildlife biologist or equivalent selected by the county.

C. The county shall consider the following factors when evaluating the request:

1. The specificity and scientific validity of the information about the species needs and behaviors;

2. The sufficiency of habitat areas to sustain the species over time; and

3. The versatility of the habitat area to sustain species other than the one being nominated for local species designation. (Ord. 10528 § 1 (part), 1994)

CITY OF PORT ANGELES

15.02.010 - Definitions. These definitions shall apply to Chapters 15.20, 15.24 and 15.28, additional definitions are located in individual chapters.

C. Critical Habitat means habitat necessary for the survival of endangered, threatened, rare, sensitive, or monitor species as identified under the Endangered Species Act.

H. Frequently flooded areas means lands in the floodplain subject to a one percent or greater chance of flooding in any given year (the 100-year storm flood). These areas include but are not limited to streams, rivers, lakes, coastal areas, wetlands, and the like.

O. Marine bluffs means coastal features that resulted from wave erosion undercutting uplands located adjacent to the shoreline, creating vertical cliffs that are an important source of sediment for coastal drift processes and/or the landforms created by these processes.

R. Priority Habitats means habitat types or elements with unique or significant value to one or more species as classified by the Department of Fish and Wildlife. A priority habitat may consist of a unique vegetation type or dominant species, a described successional stage, or a specific structural element.(WAC 173-26-020(34).

S. Puget Sound means all salt waters of the State of Washington inside the international boundary line between the State of Washington and the Province of British Columbia, lying east of one hundred twenty-three degrees, twenty-four minutes west longitude and includes the Strait of Juan de Fuca.

15.12.100 Coastal High Hazard Area. "Coastal high hazard area" means the area subject to high velocity waters, including but not limited to, storm surges or tsunamis. The area is designated on a FIRM as Zone VI-30. (Ord. 2091 §3 (part), 8/9/80.)

15.12.340 Coastal High Hazard Area. Located within areas of special flood hazard established in PAMC 15.12.030 are Coastal High Hazard Areas, designated as Zones V1-V30, VE and/or V. These areas have special flood hazards associated with high velocity waters from tidal surges and, therefore, in addition to meeting all provisions in this Chapter, the following provisions shall also apply:

A. Due to the dynamic nature of coastal high hazard areas located along the Pacific Ocean, in areas with designated Velocity Zones (V-zones) from Cape Disappointment to Cape Flattery, the following standards shall apply:

1. Prohibit new or substantially improved construction in designated V-zones; exceptions are for needed water dependent structures or structures that facilitate public recreational access to the shore. Structures which require siting in the V-zone should be sited landward of the primary dune if an active dune system is associated with the V-zone.

2. Prohibit any alteration of dunes in the above designated V-zones which could increase potential flood damage; this restriction includes prohibiting any modification or alteration or disturbance of vegetative cover associated with dunes located in designated V-zones.

B. All new construction and substantial improvements in Zones V1-V30 and VE (V if base flood elevation data is available) shall be elevated on pilings and columns so that:

1. the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level; and

2. the pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).

A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of (1) and (2) of this Section.

C. Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in Zones V1-30 and VE, and whether or not such structures contain a basement. The local administrator shall maintain a record of all such information.

D. All new construction shall be located landward of the reach of mean high tide.

E. Provide that all new construction and substantial improvements have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood latticework, or insect screening intended to collapse under wind and water loads without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. For the purpose of this Section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or State codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:

1. breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and

2. the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).

F. If breakaway walls are utilized, such enclosed space shall be usable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.

G. Prohibit the use of fill for structural support of buildings. (Ord. 2616 §4, 10/26/90; Ord. 2514 §10, 12/30/88; Ord. 2445 §9, 6/23/87; Ord. 2091 §14, 8/8/80.)

15.20.030 - Definitions. In addition to definitions contained in Chapter 15.02, the following definitions shall apply. Where definitions exist in both 15.02 and 15.20.030, the definitions in 15.20.030 shall apply.

A. "Beaches and associated coastal drift process areas" means the areas that encompass marine shorelines which contain important sites of material supply, transport and deposition that define the present landforms and natural character of the Port Angeles shoreline.

B. "Buffer" means an undisturbed area adjacent to an environmentally sensitive area that is required to permanently remain in an undisturbed and untouched condition, protect or enhance the environmentally sensitive area and is considered part of the environmentally sensitive area. No building, clearing, grading, or filling is permitted, except for minor maintenance necessary to protect life and property. A buffer is different than a setback.

D. "Critical areas" means any of the following areas, environmentally sensitive areas as defined and described in Chapter 15.20, wetlands as defined and described in Chapter 15.24, shorelines, beaches and associated coastal drift processes as described in Chapter 15.08 and the Port Angeles Shoreline Master Program and their associated buffers.

E. Environmentally sensitive areas" means any of the following areas and their associated buffers:

1. Aquifer Recharge Areas
2. Streams or stream corridors;
3. Frequently flooded areas;
4. Geologically hazardous areas:
    a. Erosion hazard areas,
    b. Landslide hazard areas,
    c. Seismic hazard areas;
5. Habitat areas for priority species and species of concern and
6. Locally unique features:
    a. Ravines;
    b. Marine bluffs;
    c. Beaches and associated coastal drift processes.

G. "Functions and Values" means the natural processes and intrinsic environmental benefits offered by an environmentally sensitive feature. As examples, a function and an associated environmental value of a marine bluff is to provide materials to shorelines and thereby maintain beaches and spits from erosion, and a function and an associated environmental value of a stream is to provide water that in turn insures the survival of a diversity of flora and fauna.

I. "Habitats of local importance" means a seasonal range or habitat element with which a given species has a primary association, and which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long-term. These might include areas of high relative density or species richness, breeding habitat, winter range, and movement corridors. These might also include habitats that are of limited availability or high vulnerability to alteration, such as cliffs, talus, and wetlands.

J. "Habitat Area for Priority Species and Species of Concern" ("Priority species and Species of Concern Habitat") means habitat supporting:

1. fish and wildlife species that are designated by the State to be of concern due to their population status and their sensitivity to habitat alteration; and
2. recreationally important species for which the maintenance of a stable population and surplus for recreation may be affected by habitat loss or change.

M. "Locally unique features" means landforms and features that are important to the character of the City of Port Angeles and the adjoining Port Angeles Urban Growth Area. These features or landforms usually contain more than one environmentally sensitive area

or "critical area". Locally unique features in the Port Angeles region include ravines, marine bluffs, and beaches and associated coastal drift processes.

O . "Riparian habitat" means areas adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems that mutually influence each other. The width of these areas extends to that portion of the terrestrial landscape that directly influences the aquatic ecosystem by providing shade, fine or large woody material, nutrients, organic and inorganic debris, terrestrial insects, or habitat for aquatic and terrestrial-associated wildlife. Widths shall be measured from the ordinary high water mark or from the top of bank if the ordinary high water mark cannot be identified. It includes the entire extent of the flood plain and the extent of vegetation adapted to wet conditions as well as adjacent upland plant communities that directly influence the stream system. Riparian habitat areas include those riparian areas severely altered or damaged due to human development activities.

15.20.040 - Applicability. This Section establishes regulations for the protection of areas which are environmentally sensitive. Areas listed, identified, classified, or rated as environmentally sensitive are those which are or may become designated environmentally sensitive by the City of Port Angeles Comprehensive Plan or by separate studies which indicate that an area is environmentally sensitive. A site specific analysis which indicates that any element regulated by this Chapter is present will result in an area being classified as environmentally sensitive.

D. This Chapter applies to all environmentally sensitive areas located on or adjacent to properties within the jurisdiction of the City of Port Angeles. Specific environmentally sensitive features (streams, ravines, marine bluffs, beaches) shall be defined and designated as set forth below. The approximate distribution and extent of environmentally sensitive areas in the City are displayed on the following series of maps on file with the City of Port Angeles Planning Department:

1. Wetland and Hydric Soil Composite Map, as promulgated pursuant to the City's Wetlands Protection Ordinance, Chapter 15.24 PAMC.

2. Environmentally Sensitive Areas Composite Maps, which shall be prepared and revised as necessary from time to time by the Director of Community Development or his designee in accordance with this Chapter. These maps are to be used as a guide to the general location and extent of environmentally sensitive areas. The maps shall be used to alert the public and City officials of the potential presence of environmentally sensitive areas on-site or off-site of a development proposal. Given the generalized nature of these maps and recognizing that environmentally sensitive areas are a dynamic environmental process, the actual presence and location of environmentally sensitive areas, as determined by qualified professional and technical scientists, shall be established and protected in accordance with all the provisions of this Chapter, which shall govern the treatment of proposed development sites. In the event that any of the environmentally sensitive areas shown on the maps conflict with the criteria set forth in this Chapter, the criteria shall control.

CITY OF PORT TOWNSEND

19.05.020 Definitions.

23. "Environmentally sensitive areas (ESAs)" are the same as critical areas, as defined by the Washington State Growth Management Act. These environmentally sensitive areas in Port Townsend are geologically hazardous areas, frequently flooded areas and critical drainage corridors, wetlands, aquifer recharge areas, and fish and wildlife habitat conservation areas.

27. "Fish and wildlife habitat areas" include, but are not limited to, a seasonal range or habitat element with which a classified species has a primary association, and which, if altered, may reduce the likelihood that the species will maintain population levels and reproduce over the long term. These may include areas of relative density or species richness, flyways, breeding habitat, winter range, migratory routes and wildlife movement corridors.

19.05.080 Sensitive area 2 – Fish and wildlife habitat areas.

A. Purpose. The Washington State Department of Wildlife is in the process of defining, identifying and mapping priority habitat and species and preparing management recommendations for them. Priority habitat types found in urban growth areas like Port Townsend include wetlands, critical drainage corridors, marine bluffs and urban natural open space. Some of these areas, especially wetlands and critical drainage corridors, provide excellent animal and bird habitat areas. This section outlines techniques for the city to use in evaluating land uses and protecting habitat areas which may be adversely impacted by these uses (see the procedures manual). These regulations are intended to provide reasonable measures to protect and conserve the habitat of certain fish and wildlife species and thereby maintain or increase their populations within Port Townsend. Habitat conservation will be accomplished by actively managing to maintain these species in their preferred habitats. However, habitat conservation does not require that all individuals of all species are protected.

B. Classification. The following areas are defined as fish and wildlife habitat areas and are identified under this chapter:

1. Lands and waters containing documented habitats for plant and animal species listed in the Washington Department of Wildlife's Priority Habitats and Species Program Report. Species of local significance may be added by action of the city council where the value and significance of such species locally can be established and sound scientific evidence can be presented to establish that the species' existence is determined to be locally significant;

2. All public and private tidelands or bedlands suitable for shellfish harvest as designated by the Washington Department of Health's classification system. Shellfish protection districts may be established pursuant to Chapter 90.72 RCW;

3. Areas with kelp and eelgrass beds. Kelp and eelgrass beds may be classified and identified with the Department of Natural Resources Aquatic Lands Program and the Department of Ecology. Many locations are compiled in the Puget Sound Environmental Atlas or the Port Townsend urban waterfront EIS maps;

4. Herring and smelt spawning areas. Times and locations are outlined in WAC 232- 14-010, Hydraulic Code Guidelines, Technical Report No. 79, and the Puget Sound Environmental Atlas;

6. Streams and waters of the state that provide habitat to endangered or threatened species, or certain species that have been identified as being sensitive to habitat manipulation, as defined in WAC 222-16-030, Forest Practices Rules and Regulations;

7. Lakes, ponds and streams planted with game fish, including those planted under the auspices of a federal, state, local or tribal program, and waters which support priority fish species as identified by the Department of Wildlife.

Protection examples

WHATCOM COUNTY

16.16.720 Regulatory requirements.

A. **Listed Species**. Listed species are those officially designated by the State Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service as endangered, threatened, sensitive, or candidate (refer to species list in Appendix C). These are species known to be experiencing or have experienced failing or declining populations due to factors such as limited numbers, disease, predation, exploitation, or a loss of suitable habitat. These species are in jeopardy of extirpation or extinction because of population declines.

1. Where a project is proposed within an area where listed species have a primary association, a habitat management plan will be required. The limits of development and other related activities within the HCA shall utilize the recommendations of the plan. The habitat management plan shall be prepared in compliance with WCC 16.16.730.
2. Activities may be permitted within an area where listed species have a primary association subject to conditions designed to avoid adverse impacts, provided that the county may deny a project if such impacts cannot be avoided.

B. **Habitats and Species of Local Importance**. Habitats and species of local importance include habitat supporting both vulnerable and recreationally important species (refer to species list in Appendix C). Vulnerable species include those susceptible to significant population declines because they are uncommon (either within a specific area or statewide), have a very limited distribution, or have special space or habitat requirements. These characteristics make them particularly vulnerable to significant population declines because of disease, extreme weather, or loss of suitable habitat. Recreationally important species include species (native or introduced) with high recreational importance (consumptive or nonconsumptive) or high public profile and that are vulnerable to habitat loss or degradation. These species contribute to local economies and/or provide opportunities for human interaction that are especially valued by the public.

1. Where a project is proposed within an area where habitats and species of local importance have a primary association, and the technical administrator determines that habitat disruption is likely to occur from the project as proposed, then a habitat management plan will be required. The limits of development and other related activities within the HCA shall utilize the recommendations of the plan. The habitat management plan shall be prepared in compliance with WCC 16.16.730.
2. Activities may be permitted within an area where habitats and species of local importance have a primary association subject to conditions designed to avoid adverse impacts; provided, that the county may deny a project if such impacts cannot be avoided.

C. Shellfish Habitat Conservation Areas. Shellfish habitat conservation areas are found in estuarine wetland systems, and are protected from dredging or filling activities through Article VI, Wetlands, as well as the Washington State Department of Fish and Wildlife hydraulic project approval process and through policies and regulations of the Whatcom County shoreline management program. In addition, shellfish habitat conservation areas are protected from water quality impacts through the protection of wetlands, rivers and streams which protect water quality by establishing appropriate buffers from the ordinary high water mark of rivers, streams, and wetlands. In addition, the following provisions apply in order to further protect shellfish habitat conservation areas:

1. All owners of on-site sewage disposal systems (OSS) within any shellfish habitat conservation area, shall operate and maintain their OSS in accordance with WCC 24.05.170, operation and maintenance. In addition, as part of the OSS permitting process

for new systems, all owners of OSS shall sign an operation and maintenance agreement provided by the Whatcom County health department, detailing operation and maintenance requirements as specified in WCC 24.05.170(1) and (3).

2. Storm water discharges to shellfish habitat conservation areas shall be controlled and treated to provide all known and reasonable methods of prevention, control, and treatment to meet freshwater and marine state water quality standards, as appropriate at the point of discharge. Standards should include filtration through mechanical or biofiltration, vegetation retention, timely reseeding of disturbed areas, use of grass-lined bioswales for drainage, and other mechanisms as appropriate within storm water "special districts." The project shall conform with chapters two and three of the Whatcom County development standards.

D. Kelp and Eelgrass Beds – Pacific Herring Spawning Areas. Pacific herring spawn on kelp and eelgrass beds, therefore protection of kelp and eelgrass beds will serve to protect Pacific herring spawning areas. Kelp and eelgrass beds are found in estuarine wetland systems, and are protected from dredging or filling activities through Article VI, Wetlands, as well as the Washington State Department of Fish and Wildlife hydraulic project approval process and through policies and regulations of the Whatcom County shoreline management program. In addition, kelp and eelgrass beds are protected from the detrimental effects of sediment deposition through the protection of wetlands, rivers and streams which protect water quality by establishing appropriate buffers from the ordinary high water mark of rivers, streams, and wetlands.

E. Surf Smelt and Pacific Sand Lance Spawning Areas. Surf smelt and Pacific sand lance spawn along shoreline areas by depositing their eggs on upper intertidal sandy gravel beaches. These areas are protected from dredging or filling activities through the Washington State Department of Fish and Wildlife hydraulic project approval process and through policies and regulations of the Whatcom County shoreline management program. In addition, the following requirements are applicable through this chapter:

1. All development including docks, jetties, and bulkheads shall avoid or mitigate impacts to surf smelt and Pacific sand lance spawning areas.

2. Shoreline protection projects shall not adversely affect the supply of beach sands and gravels necessary for supplying surf smelt and Pacific sand lance spawning area substrate.

F. Ponds and Wetlands. The nearshore and deepwater habitats of wetlands and ponds providing fish and wildlife habitat shall be protected according to the provisions of Article VI in addition to subsections (A) and (B) of this section.

G. Lakes and Marine Water Bodies. The nearshore and deepwater habitats of lakes and marine water bodies providing fish and wildlife habitat shall be protected according to the provisions of Article VI in addition to subsections (A) and (B) of this section.

H. Rivers and Streams. River and stream buffer areas shall be established from the ordinary high water mark to protect riparian functions that influence fish and wildlife habitat quality, in addition to floodwater attenuation, erosion control, and cultural or recreational uses.

1. There shall be no activity allowed within a river or a stream or its buffer without meeting the mitigation requirements of WCC 16.16.245 unless the activity is exempt through WCC 16.16.225 or as provided for in this section.

2. Land divisions may be clustered where permitted by zoning and as appropriate to reduce disturbance to rivers and streams and buffers.

3. Buffer areas shall be established to protect river and stream functions. All rivers and streams shall be protected by a standard 100-foot buffer, provided, however, that a standard 50-foot buffer shall be applied to those waterways not utilized by salmonid fish populations and which do not directly flow into such waterways.

4. Buffers shall remain naturally vegetated except where the vegetation has been invaded by noxious weeds or where the natural buffer can be enhanced for habitat, bank stabilization or water quality purposes.

5. All buffers shall be measured on a horizontal plane from the ordinary high water mark.

6. Standard buffer adjustment shall be allowed in accordance with WCC 16.16.650.

I. Natural Area Preserves. Natural area preserves shall be protected from identifiable off-site impacts where the integrity of the preserve is threatened, provided that the owners of the preserve propose relevant management strategies considered effective and within the scope of this chapter, provide maps of the requested FWHCA and provide a description of habitat features and ecological importance of the site.

1. Submitted proposals will be reviewed by the technical administrator and forwarded to the Departments of Fish and Wildlife, Natural Resources, and/or other local and state agencies or experts for comments and recommendations regarding accuracy of data and effectiveness of proposed management strategies.

2. The Whatcom County planning commission will hold a public hearing for proposals found to be complete, accurate, potentially effective and within the scope of this chapter. If approved, projects will become subject to the provisions of the management plan as appropriate. (Ord. 97-056 § 1).

CLALLAM COUNTY

27.12.315 Protection standards for aquatic habitat conservation areas.

(12) Stabilization and Relocations. Stabilization and relocation proposals that qualify as fish habitat or passage improvement projects under Second Substitute House Bill 2879 (Chapter 249, Laws of 1998) shall be processed as a Certificate of Compliance pursuant to this chapter. All other stabilization and relocation requests shall comply with the provisions of this section, and shall require a certificate of compliance.

(a) **Stabilization**. A stream channel or bank, bluff, and shore may be stabilized for the purpose of retarding erosion, protecting channels or shorelines, and retaining uplands when its naturally occurring movement threatens legally placed, existing structures utilized as a primary residence, or public improvements which cannot be moved and are considered essential to the public welfare, unique natural resources, or the only feasible access to property, and, in the case of streams, when such stabilization results in maintenance of fish and wildlife habitat, hazard reduction and improved water quality. Bluff, bank and shoreline stabilization shall follow the standards of the Clallam County Shoreline Master Program and any floodplain management plan adopted by the Board of Commissioners, as they apply. The review authority may require that bank stabilization be designed by a licensed, civil engineer with sufficient expertise in hydraulic actions of shorelines, along with a biologist to address habitat issues.

(i) Stabilization methods include, but are not limited to: bulkheads, riprap revetments, jetties, groins, bioengineering measures, vegetation management measures, and beach enhancement. Not included are fish enhancement projects such as woody debris placement. “Hard” structural stabilization measures refer to those with solid, hard surfaces, such as concrete bulkheads, or rip rap. “Soft” methods rely on softer materials, such as vegetation or beach enhancement. Generally, the harder the structure, the greater the impact on wave action, geohydrology and biological functions.

The following criteria shall be met for all stabilization structures:

(A) Avoidance or relocation of the structure or improvement that needs protection has been reviewed and is not feasible or practical;

(B) The action is the minimum necessary to meet the desired goals;

(C) Any adverse impacts have been mitigated in accordance with Part Eight of this chapter;

(D) The public need, if any, for a stabilization structure has been identified;

(E) The state's interest in adjacent resources is protected and maintained;

(F) Preferred methods recommended in any County-adopted flood hazard management plan specific to a stream are proposed, or the proposal reflects improved methods after plan adoption;

(G) The proposal is not located within a channel meander hazard.

(ii) All stabilization activities shall minimize any potential negative impacts to the natural functions of the shoreline and shall meet the following minimum standards:

(A) The replacement of an existing structure is allowed if the need is demonstrated and the natural function or character of the shoreline is improved, unless impractical.

(B) Consideration shall be given to those properties adjacent to and affected by an existing shoreline stabilization structure which may be causing erosion or an unstable situation as determined by a qualified professional; provided, that compliance with this subsection can be made.

(C) The least-intrusive method is chosen which shall incorporate bioengineering where feasible and practicable. "Soft" structural methods are preferred over "hard" methods.

(D) The effects of the stabilization to upstream and downstream properties, or net shore and littoral drift are clearly disclosed by a qualified professional and taken into consideration by the review authority.

(E) The materials used in or near surface waters shall not contain petroleum-based treatments or preservatives, including creosote, copper and arsenic.

(F) A geotechnical report may be required on Type II – V streams and is required on Type I streams. Said report shall describe the site geology, and shall provide conclusions, alternatives and recommendations regarding the effect of the proposed activity.

(G) Should current biological data for the specific site not be known or available, a mitigation plan by a qualified professional may be required to identify biota and habitat present, and to address the potential effects of any intrusion or covering of any critical saltwater or freshwater habitats.

(b) Relocations. Stream relocations shall only be allowed for the purpose of enhancing and/or restoring the functions of aquatic habitat conservation areas and when adhering to the following minimum standards:

(i) The channel, bank and buffer areas are replanted with native vegetation that replicates a natural, undisturbed riparian condition; and

(ii) For those lands and waters designated as frequently flooded areas, a civil engineer provides information which demonstrates that the equivalent base flood

storage volume and function of all discharges will be maintained and the base flood discharge shall not be increased.

27.12.415 Landslide hazard protection standards.

All development within the jurisdiction of designated landslide hazard areas shall adhere to the following standards:

(1) Buffers.

(a) A minimum buffer of fifty (50) feet shall be established from the top, toe and all edges of landslide hazard areas for major or minor new developments, except as otherwise allowed under this subsection. The buffer shall not be altered except by a general exemption, certificate of compliance, variance, or reasonable use exception approval, as authorized by this chapter; provided, that such alterations meet all other standards for the protection of aquatic habitat conservation areas.

(b) Buffers that are in their natural state should not be altered and should remain in their natural condition, and enhanced whenever possible.

(c) The buffer may be reduced to not less than twenty (20) feet by the Administrator upon the submittal of a geotechnical report as specified in Part Eight of this chapter; provided further, that vegetation removal, including mature trees, within the buffer area that is reduced is kept to a minimum.

(d) Any buffer reduction to less than twenty (20) feet, or developments proposed within the landslide hazard shall require a reasonable use exception approval pursuant to Part Seven of this chapter, and shall require a geotechnical report as required by Part Eight.

(e) Hazard Tree Removal. Where a threat to human life or property is demonstrated, the Administrator may allow the falling of a danger or hazard tree subject to the following criteria: (i) tree removal is the minimum necessary to balance the protection of the critical area and its buffer with protection of life and property; and (ii) planting of a tree may be required to assure habitat protection.

(f) Pre-existing lots or land divisions regulated by CCC Title 29, Clallam County Land Division Code, for which geotechnical plans were previously prepared may be considered to have already complied with this section unless new information such as recent geologic activity warrants a new report to be required; provided, that any new storm water best management practices that were not previously included as a part of the geotechnical report shall be incorporated.

(g) The buffer may be increased by the review authority for development adjacent to a bluff or ravine which is severely unstable based on recent geological events.

KING COUNTY

NEW SECTION. SECTION 193. There is hereby added to K.C.C. chapter 21A.24 a new section to read as follows:

Aquatic areas – buffers.

B. Within the Urban Growth Area, aquatic area buffers shall be as follows:

1. A type S or F aquatic area buffer is one-hundred-fifteen-feet;

2. A type S or F aquatic area buffer in a basin or shoreline designated as "high" on the Basin and Shoreline Conditions Map is one-hundred-sixty-five-feet;

JEFFERSON COUNTY

3.6.5.d (2)ii **Stormwater Disposal** To help prevent seawater from intruding landward into underground aquifers, all new development activity on Marrowstone Island, Indian Island and within ¼ mile of any marine shoreline shall be required to infiltrate all stormwater runoff onsite. The Administrator will consider requests for exceptions to this policy on a case-by-case basis and may require a hydrogeologic assessment.

3.6.7.b.(2) iii **Drainage and erosion control** Surface drainage shall not be directed across the face of a marine bluff, landslide hazard or ravine. The applicant must demonstrate that the stormwater
discharge cannot be accommodated onsite or upland by evidence of a geotechnical report, unless waived by the Administrator. If drainage must be discharged from a bluff to adjacent waters, it shall be collected above the face of the bluff and directed to the water by tight line drain and provided with an energy dissipating device at the shoreline, above OHWM.

PIERCE COUNTY

18E.40.030 Fish and Wildlife Habitat Conservation Area Review Procedures.

A. General Requirements.

3. When the Department's maps, sources, or field investigation indicates that the site for a proposed regulated activity is located within a potential regulated fish or wildlife habitat area, the Department shall require the submittal of a fish and wildlife application and habitat assessment to determine the presence or absence of regulated fish or wildlife species or habitat. The habitat assessment shall be documented as set forth in subsection 18E.40.040 B, below. (See Figure 18E.40-3 in Chapter 18E.120.)

18E.40.040 Fish and Wildlife Habitat Conservation Area Standards.

4. Shoreline Erosion Control Measures. New or replacement shoreline erosion control measures shall be subject to the following standards:

a. The proposal complies with the provisions set forth in Chapter 18E.110.

b. The applicant has submitted a habitat assessment report, as set forth in Section18E.40.030.

c. The habitat assessment report demonstrates the following:

(1) Natural shoreline processes will be maintained. The project will not result in increased beach erosion or alterations to, or loss of, shoreline substrate within 1/4 mile of the site.

(2) The shoreline erosion control measure will not adversely impact critical fish or wildlife habitat areas or associated wetlands.

(3) Adequate mitigation measures, as set forth in Section 18E.40.050, are provided that ensure no net loss of intertidal or riparian habitat or function occurs as a result of the proposed shoreline erosion control measure.

(4) No alteration of intertidal migration corridors occurs as a result of the proposed shoreline erosion control measure.

6. Launching Ramps - Public or Private. Launching ramps may be allowed when the applicant has submitted a habitat assessment report as set forth in Section 18E.40.030 that has demonstrated the following: Exhibit "D" to Ordinance No. 2004-56s Page 68 of 144

a. The project will not result in increased beach erosion or alterations to, or loss of, shoreline substrate within 1/4 mile of the site.

b. The ramp will not adversely impact critical fish or wildlife habitat areas or associated wetlands.

c. Adequate mitigation measures, as set forth in Section 18E.40.050, are provided that ensure no net loss of intertidal or riparian habitat or function occurs as a result of the ramp.

d. No alteration of intertidal migration corridors as a result of the ramp.

18E.40.070 - Appendix C

Habitat Assessment Reports

A. The applicant is advised to refer to the following guidance documents during the course of the habitat assessment report (HAR) preparation:

1. Washington Department of Fish and Wildlife Priority Habitat and Species Management Recommendations, May 1991 (or as hereafter amended), and supplemental documents including but not limited to:

a. Priority Habitats and Species List;

b. Management Recommendations for Washington's Priority Habitats: Oregon White Oak Woodlands;

c. Management Recommendations for Washington's Priority Habitats: Volume I Invertebrates; and

d. Management Recommendations for Washington's Priority Habitats: Volume III Amphibians and Reptiles.

2. Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale (NMFS, 1996).

3. A Guide to Biological Assessments (NMFS, revised March 23, 1999).

4. Biological Assessment Preparation and Review (USFWS, March 1999).

5. NMFS Checklist for Documenting Environmental Baseline and Effects of Proposed Action(s) on Relevant Indicators.

6. Stream Survey Report Criteria, King County Department of Development and Environmental Services.B. The following information must be included in every habitat assessment report:

1. **Project Description.** Describe in detail the type and scope of action proposed:

a. Describe the overall purpose of the project and a brief summary of project objectives.

b. List all proposed project related construction activities and types of equipment.

c. Provide to-scale plans that show where work is proposed relative to sensitive areas and/or habitat. If the applicant proposes to reduce a standard buffer, the site plan shall identify all significant trees adjacent to the reduced buffer.

d. Quantify areas of vegetation removal, include clearing and grubbing, vegetation type, replanting plans.

e. Provide a chronology of activities, timing of construction, phasing.

f. Describe proposed grading and filling or other earthwork, include specific BMPs for erosion, sedimentation, stormwater, and spill control. If appropriate, append the TESC Plan, Spill Control Plan, BMP specifications, etc.

g. Provide stormwater treatment information including:

(1) Amount of new impervious surface;
(2) Percent of surface and type of treatment for new and existing impervious surface;
(3) Specify BMPs to treat for quality and quantity;
(4) Identify the receiving area /waterbody for each BMP, including overflow channels.

h. Describe proposed in-water work (below OHWM or extreme high tide) and work over waterbodies, and potential for impacts to riparian or aquatic vegetation. Exhibit "D" to Ordinance No. 2004-56s Page 84 of 144 Include conditions and work windows as described in the WDFW Hydraulic Project Approval. State clearly if the project does not include any in-water or over water work.

3. **Regulated Fish and Wildlife Species and Habitat Conservation Area Occurrence**. The HAR must be based on current site-specific information about the species and its life history. Cite any relevant scientific literature or research findings. At a minimum, the following items should be addressed:

a. Cite species listings provided by NMFS, WDFW, and/or USFWS. Append a copy of the listing to the report. Species listings should be updated every six months.

(1) Identify any State-listed, Federal or State proposed species (and candidate or species of concern if appropriate), and designated or proposed critical habitat that are known or have the potential to occur on site or in the vicinity of the project area.
(2) Identify fish by ESU.

b. Describe the species, its habitat requirements and ecology in general, and relate that to the local populations. A lengthy life history is not required, but enough information should be provided to adequately explain the potential impacts.

c. Describe the potential suitable habitat for the species found on site or in the project vicinity and how local populations use it. Discuss the local status of the species as appropriate. Determine the likely level and type of use of the area by each species.

4. **Analysis of Effects on Listed and Proposed Species and Designated and Proposed Habitat.** The HAR should provide a thorough analysis of (and a separate Section addressing) the potential direct, indirect, interrelated and interdependent, and Exhibit "D" to Ordinance No. 2004-56s Page 85 of 144 cumulative effects of the action on the regulated species and its habitat within the project area. The following items should be addressed:

a. Define the project area (area of potential impacts, both indirect and direct). The area of impact is usually larger than the project area or project vicinity (i.e., the river upstream and downstream from a bridge project, waterbodies receiving stormwater).

b. Describe how the environmental baseline (current or pre-project condition of the habitat in the project area) will be degraded, maintained or improved (restored). If appropriate, append the completed NMFS Checklist for Documenting Environmental Baseline and Effects of Proposed Action(s) on Relevant Indicators.

c. Direct Effects: Describe and analyze the effects of the action that would directly affect the species. Include actions that would potentially remove or destroy habitat, displace or otherwise influence the species, either positively (beneficial effects) or negatively (adverse effects).

d. Describe potential for impacts from disturbance (i.e., noise above ambient levels, sudden loud noises, increased human activity), from construction and continuing operation. Construction impacts would be considered a direct effect whereas operation noise impacts could be considered indirect effects as they occur later in time.

e. Indirect Effects: Describe any potential indirect impacts (those that occur later in time) such as impacts to future food resources or foraging areas, and impacts from increased long-term human access.

f. Interrelated/Interdependent Effects: Describe and analyze any potential effects from interdependent actions (actions that have no independent utility apart from the primary action) and interrelated actions (actions associated with the primary action and dependent upon that action for their justification) on the species or habitat that would not occur if not for the proposed action. Examples of these two effects include site clearing activities associated with new home construction (an interdependent effect) and increases in light, noise, and glare that occur as a result of land division (an inter-related effect).

g. Cumulative Effects: Identify to the extent possible those cumulative effects within the project area that are reasonably certain to occur.

h. If species specific recovery plans or management plans have been established by the U.S. Fish and Wildlife Service, Washington State Department of Fish and Wildlife, or National Marine Fisheries Service, address the project in terms of compliance and recommendations.

i. For proposed species, analyze the potential for the project to jeopardize the continued existence of the species.

j. The HAR must contain a distinct statement of the overall effect of the project on each species. It must also provide supporting evidence to justify the effect determination (for listed species) or jeopardy call (for proposed species). The determination must be consistent throughout and worded correctly. See attached NMFS or USFWS Guidance for specific wording for each status.

5. Recommended Conservation Measures. The HAR should describe components of the project that may benefit or promote the recovery of listed species and are included as an integral part of the proposed project. These conservation (or Exhibit "D" to Ordinance No. 2004-56s Page 86 of 144 mitigation) measures serve to minimize or compensate for project effects on the species under review. The following items should be addressed:

a. Provide specific recommendations, as appropriate, to reduce or eliminate the adverse effects of the proposed activity. Potential measures include: timing restrictions for all or some of the activities; clearing limitations; avoidance of specific areas; special construction techniques; HPA conditions; replanting with native vegetation; potential of habitat enhancement (i.e., fish passage barrier removal); best management practices, etc.

b. If applicable, append a copy of the HPA, specifications for BMPs, or other documentation to support the implementation of the conservation measure.

c. Include a description of proposed monitoring of the species, its habitat, and mitigation effectiveness.

18E.110.040 Erosion Hazard Area Standards.

A. **Active Shoreline Erosion Hazard Areas.** Any development, encroachment, filling, clearing, or grading, timber harvest, building structures, impervious surfaces, and vegetation removal shall be prohibited within active shoreline erosion hazard areas and associated buffers except as specified in the following standards:

1. **Shoreline Erosion Protection Measures.** Shoreline erosion protection measures located within or adjacent to freshwater or marine shorelines shall be allowed subject to the following:

a. The proposed shoreline protection measure shall comply with the standards set forth in Section 18E.40.040.

b. A geological assessment-shoreline erosion geotechnical report has been conducted in accordance with the provisions set forth in Section 18E.110.030 B. that indicates that the shoreline is currently experiencing active erosion (i.e., land retreat or regression). Exhibit "D" to Ordinance No. 2004-56s Page 94 of 144

c. The use of the shoreline erosion protection measure will not cause a significant adverse impact on adjacent properties (i.e., increase erosion on adjacent properties).

d. The use of the shoreline erosion protection measure will not cause a significant adverse impact on critical fish and wildlife species and their associated habitat (i.e. eliminate or reduce sediment supply from feeder bluffs).

e. The use of soft armoring techniques (soil bioengineering erosion control measures as identified in the State Department of Ecology and the Department of Fish and Wildlife guidance) is the preferred method for shoreline protection.

f. Hard armoring shoreline erosion control measures shall be approved only when a geological assessment-shoreline erosion geotechnical report, as set forth in Section 18E.110.030 B., has been completed and indicates the following:

(1) The use of beach nourishment alone or in combination with soft armoring techniques is not adequate to protect the property from shoreline erosion processes; and

(2) The property contains an existing structure(s) that will be threatened within the next 10 years or the buildability of an undeveloped site will be threatened within the next 10 years if a hard armoring method of shoreline erosion protection is not provided.

g. Hard armoring shoreline protection measures shall not be allowed for protection of proposed structures when it is determined that the proposed structures can be located landward of the 120-year regression area.

2. **Stormwater Conveyance.** Surface drainage into an active shoreline erosion hazard area should be avoided. If there are no other alternatives for discharge, then drainage must be collected upland of the top of the active shoreline erosion hazard area and directed downhill in a high density polyethylene stormwater pipe with fuse welded joints that includes an energy dissipating device at the base of the active shoreline erosion area. The pipe shall be located on the surface of the ground and be properly anchored so that it will continue to function under shoreline erosion conditions. The number of these pipes should be minimized along the slope frontage.

B. **Shoreline Erosion Hazard Management Area.** All regulated activities such as but not limited to building structures, impervious surfaces, vegetation removal, timber harvest, and clearing or grading activities may be allowed in areas located within 200 feet of an active shoreline erosion hazard area subject to the following standards:

1. The Department reviews and approves a geological assessment-shoreline erosion hazard geotechnical report and concurs that the proposed project area is located outside an active shoreline hazard area and the required buffer, as set forth in 18E.110.050. Exhibit "D" to Ordinance No. 2004-56s Page 95 of 144

2. The proposed recommendations and mitigation measures contained within the geotechnical report are adequate to reduce or mitigate risks to the natural environment, health, and safety.

3. Surface drainage from the proposed project area, including downspouts, landscape irrigation systems, and runoff from paved or unpaved surfaces upland of the shoreline, shall not be directed through an active shoreline erosion hazard area or its associated buffer unless it is conveyed in conformance with the provisions in 18E.110.040 A.2. above.

4. Stormwater retention and detention systems, such as dry wells and infiltration systems utilizing buried pipe or french drains, shall not be permitted unless such systems are designed by a professional engineer and the geotechnical report indicates that such a system will not affect the stability of the shoreline.

5. Proposed developments, with the exception of shoreline erosion protection measures, shall be sited far enough from regressing shorelines to provide 120 years of useful life for any proposed structures or infrastructure.

18E.110.050 Buffer Requirements.

A. **Determining Buffer Widths**.

1. The buffer width shall be measured on a horizontal plane from a perpendicular line established at the edge of the active shoreline erosion hazard area limits. (See Figure 18E.110-3 in Chapter 18E.120.)

2. An undisturbed buffer of existing vegetation shall be required for an active shoreline erosion hazard area. The required standard buffer width is the greatest amount of the following distances:

a. Fifty feet from all edges of the active shoreline erosion hazard area limits;

b. A distance of one-third the height of the slope if the regulated activity is at the top of the slope and a distance of one-half the height if the regulated activity is at the bottom of the slope; or

c. The minimum distance recommended by the geotechnical professional measured from the edge of the active shoreline erosion hazard area.

SAN JUAN COUNTY

B. Protection Standards.

1. **General Habitat Protection Standards**. The following performance standards shall be met for development permits or approvals located inside of or within 300 feet of a habitat classified in this section, except for Upland Category III:

a. The proposal must mitigate to the maximum extent feasible any significant adverse impacts to habitat functions and values and to habitat buffers. Mitigation actions by an applicant or property owner shall occur in the following preferred sequence, unless the applicant demonstrates that an overriding public benefit would warrant an exception:

i. Avoiding the impact by not taking a certain action or parts of actions on that portion of the site which contains the habitat area or its buffer;

ii. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

iii. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

iv. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or

v. Compensating for the impact by replacing or providing substitute resources or environments. This may require preparation of a habitat management plan in accordance with subsection (D) of this section.

b. Where impacts cannot be avoided, the applicant must seek to implement other appropriate mitigation actions in compliance with the intent, standards, and criteria of this section. In an individual case, these actions may include consideration of alternative site plans and layouts and reductions in the density or scope of the proposal.

c. Temporary and permanent erosion and sedimentation controls must be provided to prevent the introduction of sediments or pollutants to water bodies or water courses within the habitat area.

d. Clearing and grading must be limited to that necessary for establishment of the use or development and must be conducted so as to avoid significant adverse impacts and to minimize the alteration of the volume, rate, or temperature of freshwater flows to or within the habitat area and any buffer specified in this section.

e. The proposal will not introduce hazardous substances to the habitat areas that would have significant adverse impacts on that area, including but not limited to fertilizers, herbicides, pesticides, fuel and waste oil, and human or livestock fecal matter.

f. Stream flows must be protected from changes to the normal flow, temperature, turbidity, and discharge to the maximum extent practicable.

2**. Habitat-Specific Standards**. The following performance standards apply within specific habitat areas. Exceptions to these standards may be allowed if a special report, prepared by a qualified wildlife biologist, habitat management consultant, botanist, or marine biologist demonstrates that such exception would not have a significant adverse impact on the habitat area.

a. Freshwater Habitats: Septic drainfields and a 100 percent repair area must be at least 100 feet from the edge of the habitat area.

b. Marine Habitats:

i. Septic drainfields and a 100 percent repair area must be at least 100 feet from the edge of the habitat area.

ii. Uses and developments in or over water must minimize changes to natural water circulation and must be designed and operated in a manner that minimizes the introduction of contaminants and debris.

iii. Uses and developments must minimize disruption of the substrate, and the location and design of structures and activities must minimize obstruction of light in the habitat area.

THURSTON COUNTY

17.15.615 Geologic hazard areas-- Performance standards for allowed uses and activities.

H. **Shoreline Protective Structures**--Nonstructural Techniques and Bioengineering.

1.Nonstructural shoreline protective techniques are preferred to concrete *bulkheads* or other types of shoreline armoring. Nonstructural techniques include but are not limited to: beach nourishment, coarse beach fill, gravel berms, vegetation plantings and

bioengineering. Refer to the Washington Department of Ecology Slope Stabilization and Erosion Control Using Vegetation (1993), as amended.

I. Shoreline Protective Structures--Structural Techniques (Bulkhead, Gabion, Riprap or Wall).

1. Structural techniques may only be allowed along the toe of a marine bluff when it is to protect a residence and normal residential appurtenances which had an application for a building permit on file prior to February 1, 1994 and are located within the 2:1 slope measured from the toe of the bluff, and only if a marine bluff geotechnical report is completed per TCC Section 17.15.635 and the report finds that the residence or normal residential appurtenances will be threatened within the next ten years if toe protection is not provided.

L. Slope Stabilization or Retaining Wall (Not a Bulkhead). These techniques are to provide protection for an existing single-family residence or public road where other nonstructural or bioengineering techniques have not been successful or would not be appropriate. As such, they are to be allowed only as a last resort. Placement and mitigation are to be established by a geotechnical report and revegetation plan as described in TCC Section 17.15.635.

M. Trails and Trail-Related Facilities. Public and private trails and trail-related facilities, such as picnic tables, benches, interpretive centers and signs, viewing platforms, and campsites, may be allowed, and the use of impervious surfaces shall be minimized. Trails and trail related facilities may only be authorized within marine bluff hazard areas and landslide hazard areas subject to the following criteria:

1. Trails and related facilities shall, to the extent feasible, be placed on existing levies, road grades, utility, corridors, or any other previously disturbed areas;

2. Trails and related facilities shall be planned to minimize removal of trees, shrubs, snags and important wildlife habitat;

3. Trail construction and maintenance should utilize the U.S. Forest Service “Trails Management Handbook” (FSH 2309.18, June 1987) and “Standard Specifications for Construction of Trails” (EM-7720-102, June 1984) or similar standards;

4. Viewing platforms, interpretive centers, campsites, picnic areas, benches and access to them shall be designed and located to minimize disturbance;

5. Trails and related facilities shall provide water quality protection measures to assure that runoff from them does not directly adversely affect the stability of the steep slope; and

6. Native vegetation disturbed by trail construction shall be salvaged and replanted along the trail and other disturbed areas to the extent possible.

N. Vegetation Removal--Native and Forest Practices.

1. Within a marine bluff hazard area or its buffer:

Native vegetation removal is limited and may only occur after review and written permission from the Thurston County development services department and is subject to the standards of TCC Section 17.15.620B1.

2. Within a landslide hazard area or its buffer:

a. Except for danger trees, forest practices involving the conversion to a land use other than commercial forest production shall be prohibited.

b. Other native vegetation may be managed by the periodic mowing of previously cleared areas to maintain pasture vegetation free of noxious weeds and blackberries.

17.15.745 Stewardship options.

Stewardship options available to the private property owner with an area of important habitats and species include the following:

A. The "Open Space Tax Act" (RCW Chapter 84.34) allows Thurston County to designate lands which should be taxed at their current use value. The county has programs for agricultural lands, small forest lands less than twenty acres in size, and other open space lands. Thurston County has adopted a public benefit rating system which classifies properties on the basis of their relative importance of natural and cultural resources the availability of public access and the presence of a "conservation easement." These features are given a point value, and the total point value determines the property tax reduction. The open space program has property tax reductions of fifty, seventy or ninety percent. Lands with an important habitat or species would commonly qualify for this voluntary program. Applications are approved by the board of county commissioners following a public hearing.

B. A "conservation easement" is a legal agreement a property owner makes to restrict the type and amount of development that may occur on a parcel. Each easement is tailored to the particular property and to the interest of the individual owner. The property owner grants an easement to an appropriate governmental agency or non-profit land trust. It provides significant property and federal income tax benefits to the property owner.

C. Some property owners in Thurston County have benefitted from combining both aforementioned options. (Ord. 10528 § 1 (part), 1994)

CITY OF PORT ANGELES

15.20.010 - Findings of Fact. The City Council of the City of Port Angeles hereby finds that:

A. Development in stream corridors results in:

1. Siltation of streams, which destroys spawning beds, kills fish eggs and alevins, irritates fish gills, reduces aquatic insect populations, fills stream channels, and causes flooding;

2. Loss of stream corridor vegetation, which raises stream temperatures, destabilizes streambanks, causes erosion, removes nutrients by removing source of fallen leaves and streamside insects, increases sedimentation, and reduces recruitment of large wood debris necessary for stream structure;

3. Elimination of wildlife and fish habitat. The stream corridor is especially sensitive and is recognized as being among the most productive terrestrial and aquatic ecosystems. It usually provides all four of the basic habitat components - water, food, cover and space. The stream corridor is usually richer in habitat diversity and, consequently, wildlife diversity and numbers of individuals are higher than in adjoining upland plant communities. Certain fish and wildlife species are totally dependent on the stream corridor and as uplands are developed, stream corridors become a place of refuge for many wildlife species;

4. Increased peak flow rates and decreased summer low flow rates of streams, resulting in negative impacts to the physical and chemical requirements critical for sustained fish populations;

5. Stream channelization, which increases current velocity and bank erosion, removes critical fish rearing and spawning habitat, and reduces habitat diversity and simplifies the biotic community;

6. Piping of streamflow and crossing of streams by culverts, which increases potential for downstream flooding, reduces migratory fishery range

and, therefore, fish populations, removes habitat, and eliminates the biotic community; and

7. Construction near or within streams, which adversely impacts fish and wildlife by destroying habitat and degrading water quality and increases potential for flooding, property damage, and risk to public health, safety, and welfare.

B. Development of geological (erosion hazard, landslide hazard, seismic hazard) hazard areas results in:

1. Potential threat to the health and safety of residents and employees of businesses within the City;

2. Potential damage or loss to public and private property within the City;

3. Potential degradation of water quality and the physical characteristics of waterways due to increased sedimentation;

4. Potential losses to the public as a result of increased expenditures for replacing or repairing public facilities; providing publicly funded facilities to reduce or eliminate potential hazards to life and property; providing emergency rescue and relief operations; and from potential litigation resulting from incompatible development in these areas.

C. Development of fish and wildlife habitat areas results in:

1. Losses in the numbers and varieties of aquatic and terrestrial wildlife species;

2. Loss of streamside vegetation that increases erosion and sedimentation, and reduces the quality of water resources;

3. Loss of opportunities for outdoor recreation such as hunting, fishing, bird-watching, sightseeing and similar activities;

4. Loss of economic opportunities in forestry, fisheries, shellfish and tourism industries;

5. Loss of opportunities for scientific research and education.

D. Development of locally unique land features (ravines, marine bluffs, beaches) results in:

1. Disruption of the natural functioning of region surface drainage systems and the aquatic and terrestrial wildlife that depend on this habitat;

2. Increased threat to life and property as a consequence of exposure to geologic hazards and flooding;

3. Disruption of natural longshore drift processes that help maintain Ediz Hook and Port Angeles Harbor;

4. Destruction of natural greenbelts that serve to enhance the visual character of the community and serve as "community separators" that reduce the perceived degree of urbanization;

5. Loss of opportunities for trail systems and other forms of passive recreation. (Ord. 2979 §1 (part), 2/13/98; Ord. 2656 §1 (part), 11/29/91.)

15.20.020 - Purpose. Surface streams and flood hazards, geologic hazards (erosion, landslide, seismic), fish and wildlife habitat areas, locally unique features (ravines, marine bluffs, beaches) and required buffers constitute environmentally sensitive areas that are of special concern to the City of Port Angeles. The purpose of this Chapter is to protect the environmentally sensitive resources of the Port Angeles community as required by the Growth Management Act and as provided in the Guidelines promulgated by the State of Washington. Accordingly, the intent of this Chapter is to use a functions and values approach and establish minimum standards for

development of properties which contain environmentally sensitive features and to protect the public health, safety, and welfare in regard to environmentally sensitive areas by:

A. Avoiding disturbance of these areas;

B. Mitigating unavoidable impacts;

C. Protecting from impacts of development by regulating alterations;

D. Protecting the public from personal injury, loss of life or property damage due to flooding, erosion, landslides, seismic events, or soil subsidence;

E. Protecting against publicly financed expenditures in the event environmentally sensitive areas are misused, which causes:

1. Unnecessary maintenance and replacement of public facilities;

2. Publicly funded mitigation of avoidable impacts;

3. Cost for public emergency rescue and relief operations where the causes are avoidable; or

4. Degradation of the natural environment;

F. Protecting the public trust in navigable waters and aquatic resources;

G. Preventing adverse impacts to water availability, water quality and streams;

H. Protecting unique, fragile, and valuable elements of the environment, including wildlife and its habitat;

I. Alerting appraisers, assessors, owners, potential buyers, or lessees to the development limitations of environmentally sensitive areas;

J. Providing City officials with sufficient information to adequately protect environmentally sensitive areas when approving, conditioning, or denying public or private development proposals; and

K. Implementing the policies of the State Environmental Policy Act, Chapter 43.21C RCW; the City of Port Angeles Comprehensive Plan; this Chapter of the Port Angeles Municipal Code; and all updates and amendments, functional plans, and other land use policies formally adopted or accepted by the City of Port Angeles.

L. Provide protection of environmentally sensitive areas for a period until the City can complete more detailed studies of the environmentally sensitive areas within the City and adopt a comprehensive set of policies pertaining to protection of environmental resources and amend regulations which implement the policies. (Ord. 2979 §1 (part), 2/13/98; Ord. 2918 §1 (part), 6/14/96; Ord. 2656 §1 (part), 11/29/91.)

15.20.050 - Permitted Uses and Development Restrictions.

B. Development Restrictions.

1. The following environmentally sensitive areas shall remain undisturbed except as otherwise provided in Section 15.20.080, Development Exceptions:

a. Significant and important wetlands and their buffers, pursuant to the regulations presented in the City's Wetlands Protection Ordinance, Chapter 15.24 PAMC.

b. Surface Streams and their buffers, pursuant to Section 15.20.070 of this Chapter.

c. Ravines, marine bluffs and their buffers, pursuant to Section 15.20.070 of this Chapter.

d. Beaches and associated coastal drift processes pursuant to Section 15.20.070 of this Chapter.

2. All other environmentally sensitive areas identified above in PAMC 15.20.030B are developable pursuant to the provisions of Section 15.20.070 of this Chapter. The applicant shall clearly and convincingly demonstrate to the satisfaction of the Director of Community Development that the proposal

incorporates measures pursuant to this Chapter which adequately protect the public health, safety and welfare. (Ord. 2979 §1 (part), 2/13/98; Ord. 2656 §1 (part), 11/29/91.)

15.20.060 - Submittal Requirements and Support Information Required.

B. Supporting Information Required. All land uses and developments proposed in an area listed, identified, inventoried, classified, or rated as environmentally sensitive shall include supporting studies, prepared to describe the environmental limitations of the site. No construction activity, including clearing or grading, shall be permitted until the information required by this Chapter is reviewed and approved by the City as adequate. Special environmental studies shall include a comprehensive site inventory and analysis, a discussion of the potential impacts of the proposed development, and specific measures designed to mitigate any potential adverse environmental impacts of the applicant's proposal, both on-site and off-site, as follows:

1. A description of how the proposed development will or will not impact each of the following;
    a. Erosion hazards;
    b. Landslide hazards;
    c. Seismic hazards;
    d. Drainage, surface and subsurface hydrology, and water quality;
    e. Flood prone areas;
    f. Existing vegetation as it relates to steep slopes, soil stability, and natural habitat value (for wetlands, refer to Chapter 15.24 PAMC);
    g. Locally unique landforms: ravines, marine bluffs, beaches and associated coastal drift processes;
2. Recommended methods for mitigating identified impacts and a description of how these mitigating measures may impact adjacent areas.
3. Any additional information determined to be relevant by the City or by the professional consultant who prepared the study.
4. Such studies shall be prepared with assistance by qualified professionals in the area of concern, which at a minimum shall include the following types of experts:
    a. Flood hazard areas: Professional Civil Engineer licensed by the State of Washington;
    b. Erosion Hazard Areas, Landslide Hazard Areas, and Seismic Hazard Areas: Geologist and/or Civil Engineer with Geotechnical expertise;
    c. Wetlands: Biologist with wetlands ecology expertise;
    d. Streams, Rivers, Riparian Areas, Drainage Corridor, Ravine: Geologist or Civil Engineer with Geotechnical expertiese;
    e. Marine Bluffs, Beaches: Geologist, Civil Engineer with Geotechnical expertise, or Oceanographer;
    f. Fish and Wildlife Habitats: Biologist with freshwater and/or marine habitat ecology expertise.

15.20.070 - Development Standards.

B. Locally Unique Feature - Ravines, Marine Bluffs and Beaches and Associated Coastal Drift Processes. All areas falling within the corridors identified in the following subsection are subject to the requirements of this Chapter.

1. Locally Unique Feature Corridors: The following corridors, as measured from the top of ravines, the top and toe of marine bluffs, and beaches, define areas subject to the requirements of this Chapter, unless excluded by the Director of Community Development:

Ravines	200 feet;
Marine Bluffs	200 feet;
Beaches and Associated Coastal Drift Processes	Shoreline Management Jurisdiction.

Should locally unique feature corridors also overlay stream corridors, the criteria of this Section will be used.

2. Buffers. The following buffers of undisturbed vegetation shall be established from the top of ravines; the top and toe of marine bluffs and ravines:

Ravines	25 feet;
Marine Bluffs	50 feet;
Beaches and Associated Coastal Drift Processes	Per the City's Shoreline Master Program as adopted by PAMC 15.08.040.

3. Undisturbed buffers adjoining both marine bluffs and beaches shall be sufficient to assure that natural coastal drift processes will remain unimpaired.

D. Priority Species and Species of Concern Habitat Areas. To protect the habitat of species which are designated by the State to be priority species or species of concern and thereby maintain and increase their populations, priority species and species of concern habitat areas shall be subject to the following:

1. When a development proposal contains a priority species or species of concern habitat, the applicant shall submit a habitat management plan. The need for a Habitat Management Plan should be determined during State Environmental Policy Act (SEPA) review of the proposal. The habitat management plan should identify how the impacts from the proposed project will be mitigated. Possible mitigation measures should include, but are not limited to: (a) establishment of buffer zones; (b) preservation of critically important plants and trees, (c) limitation of access to habitat area, (d) scheduling construction activities to avoid interference with wildlife and fisheries rearing, resting, nesting or spawning activities; (e) using best available technology to avoid or reduce impacts; (f) using drainage and erosion control measures to prevent siltation of aquatic areas; and (g) reducing the size, scope, configuration or density of the project.

2. Buffer: To retain adequate natural habitat for priority species, buffers shall be established on a case-by-case basis as described in a habitat management plan.

3. Uses and activities allowed within a priority species or species of concern habitat area as identified by a habitat management plan shall be limited to low intensity land uses which will not adversely affect or degrade the habitat and which will not be a threat to the critical ecological processes such as feeding, breeding, nesting and resting.

15.24.010 - Findings of Fact and Purpose.

A. Findings of Fact. The City Council of the City of Port Angeles hereby finds that:

1. Wetlands and their buffer areas are valuable and fragile natural resources with significant development constraints due to flooding, erosion, soil liquefaction potential, and septic disposal limitations.

2. In their natural state, wetlands provide many valuable social services and ecological functions, including:

a. controlling flooding and stormwater runoff by storing or regulating natural flows;

b. protecting water resources by filtering out water pollutants, processing biological and chemical oxygen demand, recycling and storing nutrients, and serving as settling basins for naturally occurring sedimentation;

d. preventing shoreline erosion by stabilizing the substrate;

e. providing habitat areas for many species of fish, wildlife, and vegetation, many of which are dependent on wetlands for their survival, and some of which are on Washington State and Federal Endangered Species lists;

3. Development in wetlands results in:

a. increased soil erosion and sedimentation of downstream water bodies, including navigable channels;

b. increased shoreline erosion;

c. degraded water quality due to increased turbidity and loss of pollutant removal processes;

d. elimination or degradation of wildlife and fisheries habitat;

e. loss of fishery resources from water quality degradation, increased peak flow rates, decreased summer low flows, and changes in the streamflow regimen;

f. loss of stormwater retention capacity and slow-release detention resulting in flooding, degraded water quality, and changes in the streamflow regimen of watersheds;

4. Buffer areas surrounding wetlands are essential to maintenance and protection of wetland functions and values. Buffer areas protect wetlands from degradation by:

a. stabilizing soil and preventing erosion;

b. filtering suspended solids, nutrients, and harmful or toxic substances;

c. moderating impacts of stormwater runoff;

d. moderating system microclimate;

e. protecting wetland wildlife habitat from adverse impacts;

f. maintaining and enhancing habitat diversity and/or integrity;

B. Purpose. It is the policy of the City of Port Angeles to require site planning to avoid or minimize damage to wetlands wherever possible; to require that activities not dependent upon a wetland location be located at upland sites; and to achieve no net loss of wetlands by requiring restoration or enhancement of degraded wetlands or creation of new wetlands to offset losses which are unavoidable.

In addition, it is the intent of the City of Port Angeles that activities in or affecting wetlands not threaten public safety, cause nuisances, or destroy or degrade natural wetland functions and values by:

1. impeding flood flows, reducing flood storage capacity, or impairing natural flood control functions, thereby resulting in increased flood heights, frequencies, or velocities on other lands;

2. increasing water pollution through location of domestic waste disposal systems in wetlands; unauthorized application of pesticides and herbicides;

disposal of solid waste at inappropriate sites; creation of unstable fills, or the destruction of wetland soils and vegetation;

3. increasing erosion;

4. decreasing breeding, nesting, and feeding areas for many species of waterfowl and shorebirds, including those rare and endangered;

5. interfering with the exchange of nutrients needed by fish and other forms of wildlife;

6. decreasing habitat for fish and other forms of wildlife;

Mitigation examples

CLALLAM COUNTY

27.12.850 Aquatic and wildlife habitat conservation areas – Special requirements.

(1) Mitigation plans for impacts to wildlife habitat conservation areas shall be prepared by a biologist with professional experience in mitigation plan design, implementation, and monitoring. Where this plan is required for the protection of eagle habitat, the eagle habitat management plan shall normally be prepared by the Washington State Department of Fish and Wildlife, as required under the Bald Eagle Management Rules. The Washington Department of Wildlife Priority Habitat and Species Management Recommendations, dated May 1991, may serve as guidance for preparing mitigation plans to protect wildlife habitat conservation areas.

(2) Possible mitigation measures to be included in the report, or required by the Review Authority, could include, but are not limited to:

(a) Establishment of buffer zones;

(b) Preservation or restoration of critically important plants and trees, or other affected areas;

(c) Limitation of access to habitat areas;

(d) Seasonal restriction of construction activities; and

(e) Establishing phased development requirements and/or a timetable for periodic review of the plan.

CITY OF PORT ANGELES

15.20.030 - Definitions. In addition to definitions contained in Chapter 15.02, the following definitions shall apply. Where definitions exist in both 15.02 and 15.20.030, the definitions in 15.20.030 shall apply.

N. "Mitigation" means taking measures including avoiding, minimizing, and compensating for adverse impacts to an environmentally sensitive area and should be taken in the following order of preference and may include a combination of these measures:

1. Avoiding the impacts altogether by not taking a certain action or parts of an action but still accomplishing the objective of the proposed action;

2. Minimizing the impacts by limiting the degree or magnitude of an action, by using appropriate technology and best management practices, or by taking affirmative action to reduce impacts;

3. Rectifying the impacts of an action by repairing, rehabilitating, or restoring the affected environment;

4. Reducing or eliminating the impacts over time by preservation and maintenance operations during the life of an action;

5. Compensating for the impacts by restoring, enhancing, providing substitute resources, or creating new environments; and

6. Monitoring the impacts and the mitigation and taking appropriate corrective measures.

15.20.080 - Development Exceptions. Exceptions to the development restrictions and standards set forth in Sections 15.20.050 and 15.20.070 may be permitted by application to the Director of Community Development pursuant to the provisions of this Section.

I. Mitigation. For any allowable development exception provided under this Section, the following restoration and compensation mitigation measures to minimize and reduce impacts to environmentally sensitive areas shall be required, and a mitigation plan per Subsection I.3 of this Section shall be completed and must be approved by the Director of Community Development prior to development approval:

1. Restoration. Restoration is required when the functions and values of environmentally sensitive areas have been disrupted by alteration prior to development approval.

2. Compensation. Compensation is required from developers for all approved alterations to environmentally sensitive areas. Compensation required for specific development standards shall include, but is not limited to, the following:

a. Streams

i. The applicant shall maintain or improve stream channel dimensions, including depth, length, and gradient; restore or improve native vegetation and fish and wildlife habitat; and create an equivalent or improved channel bed, biofiltration and meandering.

ii. The Director of Community Development may postpone or limit development, require bonds pursuant to Section 15.20.100, or use other appropriate techniques to ensure the success of the mitigation plan. The decision of the Director of Community Development to postpone or limit development may be appealed per Section 15.20.110.

b. Beaches and Coastal Drift Processes

i. The applicant shall restore, enhance, or create the beach and associated coastal drift processes per the City's Shoreline Master Program as adopted by PAMC .

ii. The Director of Community Development may postpone or limit development, require bonds pursuant to Section 15.20.100, or use other appropriate techniques to ensure the success of the mitigation plan. The decision of the Director of Community Development to postpone or limit development may be appealed per Section 15.20.110.

c. Substitute Fees. In cases where the applicant demonstrates to the satisfaction of the Director of Community Development that a suitable compensation site does not exist, the Director of Community Development may allow the applicant to make a financial contribution to

an established environmental project or program. The project or program must improve environmental quality within the Port Angeles Regional watershed. The amount of the fee must be equal to the cost of mitigating the impact of stream or shoreline alteration and must be approved by the Director of Community Development.

3. Mitigation Plans. All restoration and compensation required for development exceptions shall follow a mitigation plan prepared by qualified professional experts as prescribed in PAMC 15.20.060(b)(4) containing the following components:

a. Baseline Information. Quantitative data shall be collected and analyzed for both the impacted environmentally sensitive area and the proposed mitigation site, if different from the impacted environmentally sensitive area, following procedures approved by the Director of Community Development;

b. Environmental Goals and Objectives. Goals and objectives describing the purposes of the mitigation measures shall be provided, including a description of site selection criteria, identification of target evaluation species and resource functions;

c. Performance Standards. Specific criteria for fulfilling environmental goals and objectives, and for beginning remedial action or contingency measures shall be provided, including water quality standards, species richness and diversity targets, habitat diversity indices, or other ecological, geological or hydrological criteria.

d. Detailed Construction Plan. Written specifications and descriptions of mitigation techniques shall be provided, including the proposed construction sequence, accompanied by detailed site diagrams and blueprints that are an integral requirement of any development proposal.

e. Monitoring Program. A program outlining the approach for assessing a completed project shall be provided, including descriptions or proposed experimental and control site survey or sampling techniques. A protocol shall be included outlining how the monitoring data will be evaluated by agencies that are tracking the progress of the mitigation project. A report shall be submitted at least twice yearly documenting milestones, successes, problems and contingency actions of the restoration or compensation project. The Director of Community Development shall require that the applicant monitor the compensation or restoration project for a minimum of two years.

f. Contingency Plan. A plan shall be provided fully identifying potential courses of action and any corrective measures to be taken when monitoring or evaluation indicates project performance standards are not being met.

g. Performance and Maintenance Securities. Securities ensuring fulfillment of the mitigation project, monitoring program and any contingency measures shall be posted pursuant to Section 15.20.100.

4. Final Approval. The Director of Community Development shall grant final approval of a completed restoration or compensation project if the final report of the project mitigation plan satisfactorily documents that the area has achieved all requirements of this section. (Ord. 3179 §3 (part), 12/17/2004; Ord.

2972 §1 (part), 2/13/98; Ord. 2915 §1 (part), 6/14/96; Ord. 2656 §1 (part), 11/29/91.)

15.24.020 - Definitions. In addition to definitions contained in Chapter 15.02, the following definitions shall apply. Where definitions exist in both 15.02 and 15.24.020, the definitions in 15.24.020 shall apply

E. "Compensation" or "Compensatory mitigation" means a form of mitigation that replaces project-induced wetland losses or impacts, and includes, but is not limited to, restoration, enhancement, substitute resources, creation, and preservation which are defined as follows:

1. "Restoration" means actions performed to reestablish wetlands or their buffer area's functional and value characteristics and processes which have been lost by alterations, activities, or catastrophic events within an area;

a. Active steps taken to restore damaged wetlands, or their buffers to the functioning condition that existed prior to an alteration; and

b. Actions performed to reestablish structural and functional characteristics of wetlands that have been lost by alteration, past management activities, or catastrophic events.

2. "Enhancement" means actions performed to improve the condition of an existing environmentally sensitive area so that the functions and values provided are of a higher quality;

3. "Substitute Resources" means actions performed to provide for an alternative environmentally sensitive area; or

4. "Creation" means actions performed to intentionally establish or expand an environmentally sensitive area where it did not formerly exist.

5. "Preservation" means actions taken to ensure the permanent protection of existing, high-quality environmentally sensitive areas.

O. "In-kind compensation" means to replace wetlands with substitute wetlands whose characteristics closely approximate those destroyed or degraded by a regulated activity. It does not mean replacement "in-category".

R. "Mitigation" means taking measures including avoiding, minimizing, or compensating for adverse wetland impacts. Mitigation, in the following order of preference, is:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;

2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;

3. Rectifying the impact by repairing, rehabilitating or restoring the affected environment;

4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;

5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments;

6. Monitoring the impact and the compensation project and taking appropriate corrective measures. Mitigation for individual actions may include a combination of the above measures.

S. Non-Compensatory Enhancement: Non-compensatory enhancements are those wetland enhancement projects which are conducted solely to increase the functions and

values of an existing wetland and which are not required to be conducted pursuant to the requirements of Section 15.24.070(H)(6).

T. "Off-site compensation" means to replace wetlands away from the site on which a wetland has been impacted by a regulated activity.

U. "On-site compensation" means to replace wetlands at or adjacent to the site on which a wetland has been impacted by a regulated activity.

V. "Out-of-kind compensation" means to replace wetlands with substitute wetlands whose characteristics do not closely approximate those destroyed or degraded by a regulated activity. It does not refer to replacement "out-of-category".

Definition and Classification Examples

WHATCOM COUNTY

23.40.20 DESIGNATION OF SHORELINES OF STATE-WIDE SIGNIFICANCE

In accordance with the criteria of RCW 90.58.030(2)(e), the legislature designated the following shorelines of Whatcom County, including the uplands and wetlands as therein defined, as having state-wide significance:

.23 Marine:

(b) All other marine waters, water columns, and bedlands seaward of extreme low tide.

Chapter 23.110 DEFINITIONS

A..2 **Accretion Shoreform** means a shoreline with a relatively stable berm and backshore which has been built up by long-term deposition of sand and gravel by littoral drift or stream current processes via a driftway from a feeder bluff or other material source. Such shoreforms are scarce locally in a natural condition and include barrier beaches, points, spits, tombolas, pocket beaches, and point and channel bars on streams.

B.2 **Barrier Beach** means a linear accretion shoreform of sand and/or gravel berm(s) accreted seaward of bluffs, bays, marshes or estuaries by littoral drift; the berm acts as a natural dike and seawall to its backshore or marsh hinterland.

B.4 **Beach Nourishment** - An artificial process in which selected beach material is deposited at one or several locations in the updrift portion of the drift sector. The material is then naturally transported by waves or currents downdrift to stabilize or restore accretion shoreforms and other berms, which may be eroding due to artificial obstructions in the shore process corridor.

B.9 **Breakwaters** are offshore structures generally built parallel to shore that may or may not be connected to land, and may be floating or stationary. Their primary purpose is to protect harbors, moorages and navigation activity from wave and wind action by creating stillwater areas along shore. A secondary purpose would be to protect shorelines from wave-caused erosion. Most breakwaters in the Pacific Coast are rip-rap mound construction. Several include ancillary sand bypassing operations.

D.7 **Drift Sector** means a particular reach of marine shore in which littoral drift may occur without significant interruption, and which contains any and all natural sources of such drift, and also any accretion shoreform(s) accreted by such drift. Each normal drift sector contains these shore process elements: feeder bluff or estuary, driftway, littoral drift, and accretion shoreform.

D.8 **Driftway** means that portion of the marine shore process corridor, primarily the upper foreshore, through which sand and gravel are transported by littoral drift. The driftway is the essential component between the feeder bluff(s) and accretion shoreform(s) of an integral drift sector. Driftways are also characterized by intermittent, narrow berm beaches.

F.2 F**eeder Bluff**, Erosional Bluff means any bluff (or cliff) experiencing periodic erosion from waves, sliding or slumping, and/or whose eroded sand or gravel material is naturally transported (littoral drift) via a driftway to an accretion shoreform; these natural sources of beach material are limited and vital for the long term stability of driftways and accretion shoreforms.

F.4 **Fisheries** means all species of fish and shellfish commonly or regularly originating or harvested commercially or for sport in Puget Sound and its tributary fresh-water bodies, together

with the aquatic plants and animals and habitat needed for continued propagation and growth of such species.

F.5 **Fisheries Enhancement** means development or other nonstructural alteration of a shoreline to rehabilitate, maintain or create fisheries habitat, including but not limited to hatcheries, spawning channels, lake rehabilitation, planting of fisheries stocks. Fisheries Enhancement differs from Aquaculture in that the increase in fisheries stocks eventually becomes available for public harvest.

H.2 **Hazardous Area** means any shoreline area which is hazardous for intensive human use or structural development due to inherent and/or predictable physical conditions; such as but not limited to steep slopes, unstable soils or bedrock, feeder bluffs, other erosion prone uplands, floodways, or coastal flood hazard areas.

J.1 **Jetties** are structures generally perpendicular to shore extending through or past the intertidal zone. They are built singly or in pairs at harbor entrances or river mouths mainly to prevent shoaling or accretion from littoral drift in entrance channels, which may or may not be dredged. Jetties also serve to protect channels from storm waves or cross currents, and stabilize inlets through barrier beaches. On the West Coast and in this region, most jetties are of rip rap mound construction.

L.6 **Littoral Drift** (or transport) means the natural movement of sediment, particularly sand and gravel, along shorelines by wave action in response to prevailing winds or by stream currents (see also driftway, drift sector, shore process corridor).

P.4 **Pocket beach** means an isolated berm beach existing usually without benefit of littoral drift from sources elsewhere. Pocket beaches are produced by erosion of immediately adjacent bluffs or banks and are relatively scarce and therefore valuable shoreforms in Whatcom County; they are most common between rock headlands and may or may not have a backshore.

P.5 **Point** means a low profile shore promontory which may be either the wave-cut shelf remaining from an ancient bluff or the final accretional phase of a hooked spit which closed the leeward side gap. Points are accretion shoreforms characterized by converging berms accreted by storm waves, which enclose a lagoon, marsh, or meadow, depending on the point's development stage.

P.6 **Point bar** means an accretion shoreform created by deposition of sand and gravel on the inside, convex side of a streamway bend. Most material is transported downstream as sediment and bedload at times of high current velocity, or flood stage, from eroding banks or other bars upstream.

P.11 **Protective Berm** means an artificially placed berm for erosion defense. Berms are often the most effective and economical defense work if size and material composition are appropriate.

S.2 **Sensitive Area** means any area which is naturally unsuitable or undesirable for intensive human use or structural development due to its higher development costs or its relatively higher value to region or community in its natural or present condition; such as, but not limited to: estuaries, marshes, swamps, bogs, accretion shoreforms, pocket beaches, historic sites, and unique or scarce fish and wildlife habitats.

S.3 **Shore Defense Works** are structural or non-structural modifications to the existing shoreline intended to reduce or prevent erosion of uplands or beaches. They are generally located parallel to the shoreline at or near the OHWM. Other construction classified as shore defense works include groins, jetties and breakwaters which are intended to influence wave action, currents and/or the natural transport of sediments along the shoreline.

S.5 **Shore Process Corridor** means the linear shore zone of varying width within which all physical and biologic resources and processes unique to the dynamic land-water interface occur, including such resources as floodways, point bars, deltas, points, spits, backshore beaches, feeder bluff faces, driftways, tidelands, estuaries and other associated wetlands, as well as geo-hydraulic

processes such as currents, floods, tides, erosion accretion, together with the web of littoral/aquatic plant and animal life.
T.3 **Tombolo** means an accretion shoreform which began as a spit and accreted into a causeway-like connection to an island or offshore rock; tombolas normally develop from offshore bars (submarine berms) which build up in a low energy "wave-shadow" zone between the offshore, waver barrier element and an active driftway. Tombolas at maturity constitute and accretion terminal for each part of the divided drift sector; each side may be a berm beach, or the leeward may be a marsh or lagoon.
V.2 **Vegetative Stabilization** includes planting of (1) hydrophytic (water-loving) land vegetation upon shoreline banks, slopes or berms to retain soil and retard erosion from surface runoff; (2) aquatic vegetation offshore to reduce wave action and retain bottom materials as well as; (3) utilization of temporary structures or netting to enable plants to establish themselves in unstable areas.

THURSTON COUNTY

SECTION ONE -- ADMINISTRATION

XVIII. SHORELINE PROTECTION
A. Scope and Definition
Shoreline protection is action taken to reduce adverse impacts caused by current, flood, wake or wave action. This action includes all structural and nonstructural means to reduce these impacts due to flooding, erosion and accretion. Specific structural and nonstructural means included in this use activity are bulkheads, dikes, levees, riprap, sea walls, shoreline berms, beach feeding and breakwaters.

SECTION FOUR -- DEFINITIONS
BEACH FEEDING. An artificial process in which selected beach material is deposited at one or several locations in the updrift portion of the drift sector. The material is then naturally transported by waves or currents downdrift to stabilize or restore accretion beaches and berms, which may be eroding due to artificial obstructions in the shore process corridor.
CRITICAL BIOLOGICAL AREAS. Those geographical locations where certain critical ecological processes occur such as the breeding, nesting, nursery, feeding and resting of rare, endangered or threatened species. These areas are identified on the Critical Biological Areas map of the Coastal Zone Atlas of Washington, Volume 8.
FEEDER BLUFF. A reach of shoreline which contains both an eroding beach and a feeding upland as identified on the Coastal Drift maps of the Coastal Zone Atlas of Washington, Volume 8.

SAN JUAN COUNTY

18.50.300 Pedestrian beach access structures.
A “beach access structure” is a set of steps or stairs or a ramp used to provide pedestrian access to the beach. A beach access structure is a normal appurtenance to single-family residence in San Juan County. Beach access structures are only defined as an exempt development under limited circumstances, pursuant to SJCC 18.50.020. All nonexempt beach access structures require a shoreline substantial development permit and must meet all of the general regulations for beach access structures.

CITY OF EVERETT

Definitions

Beach Enhancement

Beach enhancement means the maintenance, restoration or enhancement of a beach to control erosion, protect/enhance existing public access/recreational areas, and/or restore or enhancing littoral aquatic habitats. Beach enhancement is usually accomplished by beach feeding, vegetation, drift sills, and other non-intrusive means. (Note that new beach creation for public access and recreational use is covered under Landfill.)

Vegetation Enhancement

Vegetation enhancement includes the use of vegetation, such as willow stakes, planted on a bank or levee to reduce erosion. The vegetation creates drag forces opposing the water flow which dissipate energy and reduce flow velocity. Vegetation also protects against surface erosion and slope failure.

Protection examples

WHATCOM COUNTY

23.40.30 POLICIES FOR SHORELINES OF STATE-WIDE SIGNIFICANCE

(a) Shoreline Area designations, policies and regulations should conserve valuable shoreline resources and processes including aesthetic values to the maximum extent possible.

(b) Those limited shorelines containing unique, scarce or sensitive resources should be left in their natural state.

(c) Erosion and sedimentation from development sites should be controlled at levels which will minimize adverse impact on hydraulic and hydrologic processes. If site conditions prevent effective, feasible erosion and sediment control, excavations, land clearing, or other activities likely to result in significant erosion should be severely limited.

23.90.40 GENERAL REGULATIONS

.41 **Use Conflicts**

Required setback and buffer areas shall be planted with native or locally compatible species or maintained in a natural condition except where foot or bicycle traffic may require surfacing. Such areas may not be used for vehicle parking nor open storage. Width and physical nature of such buffers shall be determined by the County commensurate with the proposed intensity of use and character of the local area and adjacent uses.

.43 **Hazardous, Sensitive or Unsuitable Areas**

(a) Development shall be located, designed, constructed and maintained to prevent hazardous conditions and to substantially conserve wetlands, fish and wildlife habitat, shore processes and other sensitive natural features which are valuable in the region.

.46 **Water Quality**

State water quality and all other applicable standards shall be adhered to. Water quality of ground and surface waters shall not be significantly degraded.

.48 **Fish and Wildlife**

Design, location, construction and operation of all shoreline use and development activities shall not unnecessarily impact fish and wildlife resources and their respective habitats over the short or long term. Development in critical wildlife habitat areas identified by the Department of Wildlife or Fisheries shall not be permitted unless adequate mitigation of impacts can be provided. Development is also subject to the provisions of the Critical Areas Ordinance.

23.100.70.10 LANDFILL AND EXCAVATION -- POLICIES

.15 **Hazardous and Sensitive Areas**

Landfill and excavation should not generally be permitted in hazardous or sensitive areas, such as flood plains, estuaries, natural wetlands, wildlife habitat, accretion shoreforms, erosional bluffs and geologically unstable shorelines, unless alternatives are infeasible and regional benefits clearly exceed costs, including social and environmental losses.

.16 **Preferred Location**

b) On marine shores, a limited number of foreshore fills may be located at drift sector ends in low energy driftways, or on erosional pocket beaches where the effect of the landfill's interruption of the littoral process can be mitigated. However, such irreversible development of a particular shoreform and/or biologic habitat must be generally consistent with this Program in terms of purpose and need for such locations.

.18 **Shore Protection**

(a) Shore-side perimeters of fills or excavation should be sloped and protected to minimize beach and upland erosion; defense works for fills in the shore process corridor should have streamlined or angled sides if needed to minimize interference with littoral drift, flood waters, or excessive driftwood pileup; vegetative stabilization, protective berms, or other flexible, natural character means are preferred over rigid, artificial-character works. Any defense works for fills should conform to policies and regulations established under Shore Defense or Stream Control Works.

(b) Material for proposed fills including beach feedings should be selected and placed so as to prevent water quality problems and degradation of other shore resources including scenic values.

.32 **General Regulations**

(b) Necessity and Purpose

Landfill and excavation shall be permitted in limited instances for these purposes only, with due consideration given to specific site conditions, and only along with approved shoreline use and development activities that are consistent with this Program:

23.100.80.10 MARINAS AND LAUNCH RAMPS -- POLICIES

.11 **Fish, Wildlife and Plants**

Marinas and launch ramps should be located, designed, and operated to provide maximum feasible protection and enhancement for all forms of aquatic, littoral, or land life forms including animals, fish, shellfish, birds, and plants, their habitats, and their migratory routes.

.20 **Marine Shores**

(a) Preferred Locations

In order to minimize interference with littoral drift and accretion, marinas and launch ramps should be located at:

1. an end of a drift sector; or
2. an erosional pocket beach.

(b) Possible Locations

1. Foreshore marinas or launch ramps may be located at low erosion rate feeder bluffs or on low energy input erosional driftways if the proposal is otherwise consistent with this Program.

2. Backshore marinas and launch ramps may be located on closed accretional points, closed accretional bluff and bay barrier beaches, or low energy input driftways; if the proposal is otherwise consistent with this Program.

(c) Poor Locations

1. Marinas or launch ramps should not be permitted on these erosional marine shores where interference with littoral drift will likely cause degradation or losses of shoreline resources.

i) Erosional feeder bluffs

ii) High energy input driftways

2. Marinas or launch ramps should not be permitted on these wetland shores because of their scarcity, biological productivity and sensitivity:

i) Marshes, estuaries and other natural wetlands;

ii) Tidal pools on rock shores;

iii) Spawning areas.

3. Marinas or launch ramps should not be permitted to occupy these natural accretion shoreforms unless absolutely necessary, and only when the proposal is otherwise consistent with this Program. Hoists are preferred over dredged marinas or launch ramps at such locations:

i) Open points;

ii) Spits and hooks;

iii) Tombolos;

iv) Open bay barrier beaches;

v) Accretional pocket beaches.

.25 **Sensitive Areas**

Marinas and launch ramps should be designed so that adjacent fragile or unique natural and cultural features are preserved or enhanced so that they continue to provide public benefits through biological productivity and esthetic appreciation.

.27 **Water Quality**

Foreshore and backshore marinas should provide thorough flushing of all enclosed water areas. Solid waste and sewage disposal, site drainage and handling of fuels, chemicals or other toxic materials must be in compliance with all applicable Federal and State water quality laws as well as health, safety and engineering requirements.

.29 **Beach Feeding**

Marinas where dredged entrances adversely affect littoral drift to the detriment of other shores and their users should be required to periodically replenish such shores with the appropriate quantity and quality of aggregate, as determined by professional coastal engineering studies.

23.100.150.10 SHORE DEFENSE WORKS -- POLICIES

.11 **Use Conflicts**

Shore defense works should not be permitted to unnecessarily interfere with public access to public shorelines, nor with other appropriate shoreline uses including navigation, seafood harvest, or private recreation. Defense works should not be developed mainly for the purpose of filling shorelines.

.12 **Coordination**

Defense works should normally be developed in a coordinated manner among affected property owners and public agencies for a whole drift sector or homogeneous reach.

.13 **Professional Design**

Defense works should be sited and designed consistent with appropriate engineering principles.

.14 **Necessity and Purpose**

(a) The larger works such as jetties, breakwaters, or groin systems should be permitted only for shoreline dependent uses whose benefits to the region outweigh resource losses and physical and social costs from such works. Gabions should not be used as a defense work where alternatives are feasible. Jetties and breakwaters should be permitted only as an integral component of a professionally designed harbor, marina, or port. Groins have questionable effectiveness and should not be permitted except as one component of a professionally designed community or public beach management program encompassing an entire drift sector or homogeneous reach for which alternatives are infeasible. Beach nourishment is preferred to the location of permanent structures in the shore process corridor.

(b) Non-structural alternatives for necessary shore protection should be utilized whenever possible. These include no action (allow the shoreline to retreat naturally), increased building setbacks, building relocation, vegetative stabilization, beach nourishment, drainage controls and the use of natural more flexible materials and techniques. Rigid, artificial defense works should only be developed for individual lots where wave erosion threatens valuable buildings or use of the upland property, and where such works will not cause additional damage to neighboring properties or valuable shore features.

.15 **Water Quality, Fish and Wildlife**

Shore defense works should be located, designed, and maintained in a manner which preserves or enhances the quality of affected waters, and conserves or enhances fish and wildlife resources and their respective habitats.

.16 **Shore Process Integrity**

Shore defense works should be located, designed, and maintained so as to protect and maintain the integrity of natural shore features. Owners of shore property should consider ongoing shore processes and the probable effects of their shore defense works on other properties and shore features.

.17 **Restoration**

Failing, harmful, unnecessary or ineffective defense works should be removed and beaches restored with more rational, less harmful long term measures.

.18 **Bulkheads and Revetments**

The County should review all proposals for bulkheads in order to determine whether or not the proposal is necessary and suitably designed considering the location, and effect on shore resources, processes and other users. Riprap revetments are generally preferred over concrete bulkheads due to wave energy dissipation, reduced scouring and flexibility over the long term.

.19 **Sensitive and Critical Areas**

Defense works should not be located on shores where valuable geo-hydraulic or biological processes are sensitive to interference and critical to shoreline conservation, such as feeder bluffs, marshes, estuaries, geologically unstable shorelines or accretion shoreforms. The Washington Department of Fisheries criteria (WAC 220-110) should be followed to protect sensitive aquatic biological resources.

.20 **Location of Primary Use**

Primary shoreline uses should be located in a manner so that additional defense works are not likely to become necessary, unless alternatives are infeasible. Existing uses not considered appropriate to a particular shoreline location should be encouraged to relocate rather than develop massive and/or extensive defense works. Increased setbacks for buildings endangered by erosion

should be considered as an alternative to costly defense works requiring long term maintenance and which may adversely affect shore resources and other users.

.23 **Preferred Alternatives**

More flexible defense works of natural materials such as protective berms, rip rap, beach nourishment, drainage controls, or vegetative stabilization are to be strongly preferred wherever possible over rigid works of artificial materials such as concrete because the former have less adverse impact on shore features and are not so irreversible. Proposals for rigid works should demonstrate that more flexible, natural works are infeasible. Materials for defense works should be selected for long term durability, ease of maintenance, compatibility with local shore features including esthetic values, and for flexibility in future uses.

.24 **Beach Nourishment**

The beneficiaries and/or owners of large scale defense works which substantially reduce or block littoral drift and cause erosion of downdrift shores should be required to establish and maintain an adequate long term professionally engineered beach nourishment program.

.25 **Breakwaters**

Serious consideration should be given to floating, portable or submerged breakwater structures, or several relatively short structures wherever physical conditions make such alternatives with less impact feasible.

THURSTON COUNTY

XVIII. SHORELINE PROTECTION

A. Scope and Definition

Shoreline protection is action taken to reduce adverse impacts caused by current, flood, wake or wave action. This action includes all structural and nonstructural means to reduce these impacts due to flooding, erosion and accretion. Specific structural and nonstructural means included in this use activity are bulkheads, dikes, levees, riprap, sea walls, shoreline berms, beach feeding and breakwaters.

B. Policies

1. Structural solutions to reduce shoreline damage should be allowed only after it has been demonstrated that nonstructural solutions would be unable to prevent further damage.

2. Shoreline protection devices should not be allowed for the purpose of creating new land, except that within the north basin of Capitol Lake, shoreline protection structures may be allowed in conjunction with permitted fill activities that enhance and increase public access.

3. Shoreline protection structures should allow passage of ground and surface waters into the main water body, such as weep hole.

5. Shoreline protection activities should consider the ecological system of sizeable reaches of rivers, lakes or marine shorelines. This consideration should be given to factors such as off-site erosion, accretion or flood damage that might occur as a result of shoreline protection structures or activities. All uses and activities should be developed in a coordinated manner among affected property owners and public agencies.

6. Erosion, littoral drift, and accretions are primary components of the dynamic geohydraulic process that has created much of the unique and scenic shoreline. Therefore, shoreline protective structures should be located, designed and maintained in a manner which protects the integrity of these natural processes.

SECTION THREE -- POLICIES AND REGULATIONS FOR USE ACTIVITIES

7. Shoreline protection structures should be allowed to prevent damage to agricultural lands, public roads and bridges, existing structures and areas of unique public interest.
8. Shoreline stabilization projects should be located landward of natural wetlands, marshes and swamps of associated fresh and marine waters.
11. Existing natural features such as snags, stumps or uprooted trees which support fish and other aquatic systems should not be removed unless they significantly intrude on navigation, reduce flow, or threaten agricultural land or existing structures and facilities. These activities may also require a Hydraulics Permit
pursuant to WAC 220.
12. Breakwaters should be floating structures anchored in place and should not impede longshore sand and gravel transport unless such impedance is found to be beneficial to the natural system.

C. General Regulations
3. Techniques utilizing totally or in part vegetative bank stabilization methods shall be preferred over structural methods (such as concrete revetments or extensive riprap) unless the shoreline administrator determines that such methods will not provide adequate protection. This is not intended to preclude a combination of structural and vegetative methods.
4. Protective structures shall be allowed only when evidence is presented that one of the following conditions exist:

a. Erosion or an active feeder bluff is threatening agricultural land, public roads or bridges, existing structures or areas of unique public interest.

b. It is necessary to the operation and location of shoreline dependent and related activities consistent with this Master Program.

c. The request is for the repair or replacement of an existing protection device.

5. Protective structures shall be placed as close to the existing bank as feasible and parallel the natural shoreline. When they are proposed between two adjacent existing structures, the Administrator may allow it to extend out to form a straight line with the protective structure on each side. This shall only be allowed where no adverse impact will occur.
9. Use of beach material for backfill is prohibited.

SAN JUAN COUNTY

18.50.130 Vegetation management.

C. Restoration of any shoreline that has been disturbed or degraded shall be done with native plant materials with a diversity and type similar to that which originally occurred on-site.
D. Commercial nursery stock used in the restoration of disturbed or degraded shorelines shall, at maturity, emulate the previously existing vegetation in size, structure, and diversity.

18.50.070 Environmental impacts.
D. All shoreline uses and activities shall be located, designed, constructed, and managed in a manner that minimizes adverse impacts to surrounding land and water uses and must be aesthetically compatible with the affected area.
E. All shoreline uses and activities must utilize effective erosion control methods during construction and operation. Proposed methods must be included in the project description submitted with any permit application.
F. All shoreline uses and activities must be located, designed, constructed, and managed to avoid disturbance of and minimize adverse impacts to fish and wildlife resources, including spawning, nesting, rearing and habitat areas, and migratory routes.

G. All shoreline uses and activities must be located, designed, constructed, and managed to minimize interference with natural shoreline processes such as water circulation, sand and gravel movement, erosion, and accretion.

H. Land clearing, grading, filling, and alteration of natural drainage features and land forms must be designed to prevent maintenance problems or adverse impacts to adjacent properties or shoreline features.

I. All shoreline developments must be located, constructed, and operated so as not to be a hazard to public health and safety.

J. All shoreline uses and activities must be located and designed to minimize or prevent the need for shoreline defense and stabilization measures and flood protection works, such as bulkheads, other bank stabilization, landfills, levees, dikes, groins, jetties, or substantial site regrades.

0.210 Bulkheads.

A. Regulations.

1. No bulkhead to protect a single-family residence or appurtenant structures shall be constructed until the County has reviewed the proposed construction and determined that the project is or is not exempt from the shoreline permit requirements and is consistent with the policies of the SMA and this SMP.

2. Nonexempt bulkheads shall be permitted only when nonstructural shoreline protection, restoration, or modification techniques have been shown to be ineffective and it can be shown that one or more of the following conditions exists:

a. Serious erosion is threatening an established use on the adjacent uplands;

b. A bulkhead is needed and is the most reasonable method of stabilizing an existing beach condition;

c. There is a demonstrated need for a bulkhead in connection with water-dependent or water-related commerce or industry in an appropriate environment; or

d. A bulkhead is the most desirable method for stabilizing a landfill permitted under this master program.

3. Bulkheads shall not be permitted in conjunction with new projects or development when practical alternatives are available.

4. Bulkheads shall be permitted on marine feeder bluffs only where (a) a clear and significant danger to established development exists and (b) there is reasonable cause to believe that the bulkhead will in fact arrest the bluff recession and will not seriously disrupt the feeder action or the driftway.

5. Bulkheads constructed on Class I marine beaches shall be located behind the berm.

6. All bulkheads shall conform to the design requirements of the Washington Department of Fish and Wildlife, except where such design would be incompatible with protection of the shore process corridor and operating systems.

7. Applications for bulkhead permits shall include at least the following information:

a. Purpose of proposed bulkhead;

b. Low, normal, and high elevations, when appropriate;

c. Direction of net longshore drift, when appropriate;

d. Type of construction proposed; and

e. Elevation of the toe and crest of the proposed bulkhead with respect to water levels.

8. Bulkheads shall be prohibited for any purpose if it will cause significant erosion or beach starvation.

18.50.300 Pedestrian beach access structures.

A. Regulations.

1. Every application for a substantial development permit for a nonexempt beach access structure shall be evaluated on the basis of multiple considerations, including but not

necessarily limited to the potential impacts on bank stability, the extent of vegetation removal, visual impacts, and structural stability.

2. Beach access structures which can reasonably be expected to interfere with the normal erosion accretion process associated with feeder bluffs shall not be permitted. All beach access structures must comply with the bank stability requirements of SJCC 18.50.330(B)(2).

CLALLAM COUNTY

5.11 BULKHEADS

C. REGULATIONS

1. General

b. Bulkheads shall be authorized when:

1. It is adjacent to a navigable channel; or
2. When necessary to check extraordinary erosion or to repair existing installations; or
3. When the proposed design will not unduly impede littoral drift, nor affect adjacent shoreforms or shoreline properties; or
4. When necessary to protect navigational aids or recognized historical or archaeological sites.

5.16 SHORELINE PROTECTION

B. POLICIES

4. Protection of shorelines using natural vegetation should be encouraged wherever possible..

CITY OF EVERETT

4.13 Aquatic

Management Policies

5. All developments and use activities on navigable waters or their beds should be located and designed to minimize interference with surface navigation, to minimize impacts to public views, and to allow for the safe, unobstructed passage of fish and wildlife, particularly those species dependent on migration.

6. Uses that cause significant adverse impacts to critical saltwater and fresh water habitats should not be allowed. Where those uses are necessary to achieve the objectives of RCW 90.58.020, their impacts shall be mitigated according to the sequence defined under mitigation.

5.4 Boating Facilities

Policies

5. All boating facilities should be located, designed, and operated to minimize negative impacts to aquatic, littoral, or land life forms including animals, fish, shellfish, birds, and plants, their habitats and their migratory routes. To the extent possible, boating facilities should be located in areas of low biologic productivity. Mitigation of adverse impacts should be required.

6. Boating facilities should be located and designed to minimize adverse effects upon, and to enhance if possible, beneficial shoreline features and processes including erosion, littoral transport and accretion shoreforms, as well as scarce and valuable shore features including riparian habitat and wetlands.

6.2 Shoreline Stabilization

Policies

2. New development activities should be located and designed to prevent or minimize the need for shoreline stabilization measures.
3. New and replacement shoreline stabilization structures should consist of the softest measure that will protect existing uses and proposed development.
4. Mitigation should be required for impacts resulting from new shoreline stabilization activities. Shoreline stabilization measures that will result in significant adverse impacts, even with mitigation, should not be permitted.
5 Levee Armoring: Woody Biotechnical Considerations for Strengthening

6.3 Breakwaters

Policies

1. Breakwater design and construction should be of such a nature that the movement of sand, circulation of water, and biological communities are not adversely affected.
2. The availability for public use of the shoreline and water surface should be a strong consideration in allowing future breakwater construction.

Regulations

1. Breakwaters shall be permitted only when constructed as an integral part of a harbor, port or marina where protection from wave action is essential.
2. Applications for breakwaters shall provide the following information:
    a. Purpose of breakwaters.
    b. Construction material.
    c. Method of construction.
    d. Direction of net long shore drift (when appropriate).
    e. Impact on water circulation.
    f. Seasonal wind data (from 1993 revisions).

The City shall require sufficient geotechnical, hydrological and biological studies to analyze the impacts of the proposal.

3. Design Considerations
    a. Breakwaters shall not impede longshore sand and gravel transport unless such impediment is found to be beneficial. The effect of proposed breakwaters on sand movement shall be evaluated during permit review.
    b. Breakwaters shall meet or exceed all design requirements of the State Department of Fish and Wildlife.
    d. Breakwaters shall be designed and constructed in a manner which will prevent detrimental impacts on water circulation, and aquatic life. The design shall also minimize impediments to navigation and to visual access from the shoreline.
    e. The design of new breakwaters shall incorporate provisions for public access such as sightseeing and public fishing if the Planning Director determines such access is feasible. (put under public access section?)
    f. Floating breakwaters shall be used in place of solid breakwaters wherever they can withstand anticipated wave action in order to maintain sand movement and protect fish and aquatic habitat.

WHATCOM COUNTY

23.20.90 RESTORATION

The restoration element provides for the timely restoration of shorelines blighted by pollution, derelict, improper, or abandoned development, hazardous features, or illegal acts.

.91 Goal Statement

Restoration of severely blighted shorelines will be encouraged.

.92 Objectives

(a) A cooperative restoration program between public agencies and landowners should be encouraged to correct blighted shorelines.

(b) Care must be taken in restoration of shorelines to a natural condition that the key natural processes are re-established as well as more static natural features.

(c) Restoration to a natural character should be the highest priority for blighted wetlands and other critical natural areas.

(d) Development of severely blighted areas for beneficial use should be considered as an alternative if consistent with this Program.

(e) Restoration efforts following catastrophic events should be commensurate with the actual or potential harm to life, appropriate development and natural resources.

SAN JUAN COUNTY

18.50.370 Shoreline restoration and beach enhancement.

A. Regulations.

1. Beach enhancement in all environments shall be undertaken only for restoration, enhancement, or maintenance of natural resources.

2. Beach enhancement may be permitted when the applicant has demonstrated that no significant change in littoral drift will result which will adversely affect adjacent properties or habitats.

3. Natural Beach Restoration or Enhancement.

a. Design Alternatives. Design alternatives shall include the best available technology such as:

i. Gravel berms, drift sills, beach nourishment, and beach enhancement when appropriate;

ii. Planting vegetation, when appropriate. All plantings must be maintained. Vegetation planted to restore or enhance beaches shall be native plants suited to the habitat characteristics of the site.

b. Design Criteria. Natural beach restoration or enhancement shall not:

i. Detrimentally interrupt littoral drift or redirect waves, current, or sediments to other shorelines;

ii. Result in any exposed groin-like structures; however small “drift sill” groins may be used as a means of stabilizing restored sediment where part of a well planned beach restoration program;

iii. Extend waterward more than the minimum amount necessary to achieve the desired stabilization;

iv. Result in contours sufficiently steep to impede easy pedestrian passage or trap drifting sediments;

v. Create "additional dry land mass"; and

vi. Disturb significant amounts of valuable shallow water fish or wildlife habitat, unless such habitat is immediately replaced by new habitat that is comparable or better.

c. Natural Beach Restoration Construction Standards.

i. The size and/or mix of new materials to be added to a beach shall be as similar as possible to the natural beach sediment, but large enough to resist normal current, wake or wave action at the site.

ii. The restored beach shall approximate, and may slightly exceed, the natural beach width, height, bulk, or profile (but not enough to obviously create additional dry land mass).

4. All shoreline modification activities must be in support of an allowable shoreline use that is in conformance with the provisions of this master program. All shoreline modification activities not in support of a conforming shoreline use are prohibited.

5. Beach enhancement is prohibited within spawning, nesting, or breeding habitat and also where littoral drift of the materials uses adversely effects adjacent spawning grounds or other areas of biological significance.

CITY OF EVERETT

3.9 Conservation Element

The conservation element addresses the protection, preservation, enhancement and restoration of Everett's natural shoreline resources, including scenic vistas, parkways, wetlands, estuarine areas, fish and wildlife habitat, beaches, geologically hazardous areas, and other valuable natural and aesthetic features. This ordinance requires protection and/or mitigation of impacts to critical areas and gives special consideration to Fish and Wildlife Conservation Areas.

Section 3 General Goals, Objectives, Policies and Regulations Policies

1. Best available science should be used when identifying, evaluating, and mitigating impacts to critical areas.

2. The adverse impacts of shoreline uses and activities on the environment should be identified, mitigated, and monitored as appropriate, for all phases of development (e.g. design, construction, and management). (See definition of mitigation in Section 7.)

3. Highest priority should be given to the protection and restoration of fish and wildlife conservation areas as defined in EMC 19.37. These include

- Habitats of primary association (A critical component(s) of the habitats of federally or state-listed endangered, threatened, candidate, sensitive, priority, and monitored wildlife or plant species which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long term. (Partial definition))
- Riparian corridors
- Continuous vegetative corridors linking watersheds
- Significant biological areas. (Plant associations of infrequent occurrence; commercial and recreational shellfish areas; kelp and eelgrass beds; herring and smelt spawning areas; state natural area preserves and natural resource conservation areas; …) Development proposed in these areas should comply with EMC 19.37 and Planning Director Interpretation No. 2-2000, Interim Procedures, Endangered Species Act Listing for Chinook Salmon, as applicable.

4. New development on geologically hazardous areas should only be approved if consistent with the City's Environmentally Sensitive Areas (Critical Areas)

Section 3 General Goals, Objectives, Policies and Regulations
Policies
15. The City should monitor and analyze the cumulative impacts of development permitted in shoreline areas, including development exempt from Shoreline Substantial Development Permit requirements. Where impacts are occurring beyond that anticipated, the City should revise the Master program to address the cumulative impacts, and/or revise the conditions of approval of developments as allowed by EMC 19.37 (including buffers, compensation ratios, the detailed design of compensation and restoration projects, etc.) to address the new information.

Regulations:
1. All development activities shall comply with the City's Environmentally Sensitive Area Ordinance, EMC 19.37, in effect on March 21, 2001, and Planning Director Interpretation No. 2-2000, Interim Procedures, Endangered Species Act Listing for Chinook Salmon and Bull Trout, unless more stringent requirements are adopted by City Council subsequent to that date. …
3. Best available science shall be used in identifying, evaluating and mitigating impacts of development proposals. The City shall require sufficient geological, hydrological and biological studies to determine the impacts of the proposal. (See EMC 19.37 and Planning Director Interpretation No. 2-2000 in Appendix A.)
9. Existing vegetation along the shoreline in the area designated Urban Conservancy located north and west of the railroad tracks along Port Gardner Bay shall not be removed, except to replace non-native vegetation as permitted by the Planning Director through a buffer management plan or to allow construction of a permitted use when impacts to vegetation are mitigated.
11. As existing shoreline properties are redeveloped, impervious surfaces not needed for current or planned uses shall be removed and shoreline buffers shall be enhanced and/or/restored to the buffer width required by the SMP, except as necessary to accommodate access to the water necessary for the operation of water-dependent and water-related uses and/or public access. The Planning Director/Hearing Examiner shall have the authority to require redesign of the site and structures to minimize impacts to existing aquatic and buffer vegetation and to provide for buffer enhancement.
14. Where applicable, new development shall include environmental cleanup and restoration of the shoreline in accordance with state and federal requirements.
17. Where buffers are restored or enhanced, plantings shall generally be spaced and composed to mimic native buffer communities. However, plantings shall also be designed to take into account impacts to views and scenic vistas. Measures to protect views and scenic vistas may include, but not be limited to:
• grouping large trees in clusters
• selecting species that grow to heights that allow views without requiring maintenance pruning
• clustering evergreens.
18. When public access is incorporated into buffers, buffer plantings shall be preserved and/or restored to the extent practicable. However improvements such as, paved trails, non-motorized public access bridge structures, overlooks, limited grassy recreational areas, and limited areas of hardened surfaces for direct access to the water may be permitted.

19. All plantings within environmentally sensitive areas and their required buffers shall be native species or native-hybrids. The City shall encourage developers to use native species for all landscaping within 100 feet of the shoreline, except for areas permitted for grass in conjunction with public access, recreational developments, or dike maintenance.

20. When restoring and enhancing buffers along the Snohomish River and its estuary, overhanging vegetation shall be provided along dikes and shoreline stabilization structures when feasible.

21. Buffers shall be maintained to eliminate invasive non-native species when practicable. Assurance devices shall be required for restored and enhanced buffers.

31. Best available science shall be used in the design and implementation of compensation and restoration projects.

32. Monitoring shall be required for all projects where compensation is required for impacts to environmentally sensitive areas, and for projects where buffer enhancement and/or restoration is required. Monitoring requirements shall be based upon the performance standards defined for the project. Provisions shall be made for contingency measures to take in case the compensation does not meet performance standards within specified timeframes.

33. For all mitigation proposals incorporating buffer enhancement, a 5-year Set-Aside shall be required to cover the costs of monitoring, maintenance, and contingencies, including 50 percent of the cost of the plantings. The applicant's biologist shall submit a letter to the City upon installation of the buffer enhancement. Monitoring reports shall be submitted at the end of years 1, 3, and 5 following installation, unless more frequent reports are required in the approval. Contingencies must be implemented based upon the findings of the monitoring. The City may release the Set-Aside sooner than 5 years if the enhancement is determined by the City to be successful.

Appendix: Regulatory Language Citations

County/City	Source Document	Date of Adoption	Web Link
Pierce Co.-CAO	18E PCC	10/19/2004	http://www.co.pierce.wa.us/xml/Abtus/ourorg/council/code/title%2018e%20pcc.pdf
King Co.-CAO	21A.24 KCC	10/29/2004	http://www.metrokc.gov/mkcc/Code/29-Title%2021A24-21A26.pdf
Clallam Co.-CAO	27.12 CCC	6/26/2001	http://search.mrsc.org/nxt/gateway.dll/cllmmc?f=templates&fn=cllmpage.htm$vid=municodes:Clallam
Clallam Co.-SMP	Clallam County Shoreline Master Program	6/16/1992	http://www.clallam.net/PermitsLicenses/html/environmental_permits.htm
Whatcom Co.-CAO	16.16 WCC	11/3/1997	http://search.mrsc.org/nxt/gateway.dll/whatmc?f=templates&fn=whatpage.htm$vid=municodes:Whatcom
Whatcom Co.-SMP	Title 23 Shoreline Management Program	5/12/1998	http://www.co.whatcom.wa.us/pds/shorelines_critical_areas/pdf/SMP%20TITLE%2023.pdf
Jefferson Co.-CAO	Jefferson County Unified Development Code Section 3	1/16/2001	http://www.co.jefferson.wa.us/commdevelopment/udc/2004/Section%2003_FINAL-Amended%208-2004%20_Web%20Version_.pdf
Thurston Co.-CAO	17.15 TCC	Nov-04	http://www.ordlink.com/codes/thurston/index.htm
Thurston Co.-SMP	19 TCC	May-90	http://www.ordlink.com/codes/thurston/index.htm
Port Angeles-CAO	15.20 PAMC	Dec-04	Not Yet Available Online
Port Townsend-CAO	19 PTMC	Dec-03	http://search.mrsc.org/nxt/gateway.dll/ptwnmc?f=templates&fn=ptwnpage.htm$vid=municodes:PortTownsend
Seattle-CAO	25.09.020 SMC	Mar-99	http://clerk.ci.seattle.wa.us/~public/code1.htm
Everett-SMP	Everett Shoreline Master Program	7/1/2004	Not Yet Available Online
San Juan Co.-CAO	18.30 SJCC	12/20/1998	http://search.mrsc.org/nxt/gateway.dll/sanjmc?f=templates&fn=sanjpage.htm$vid=municodes:SanJuan
San Juan Co.-SMP	15.50 SJCC	12/4/2001	http://search.mrsc.org/nxt/gateway.dll/sanjmc?f=templates&fn=sanjpage.htm$vid=municodes:SanJuan